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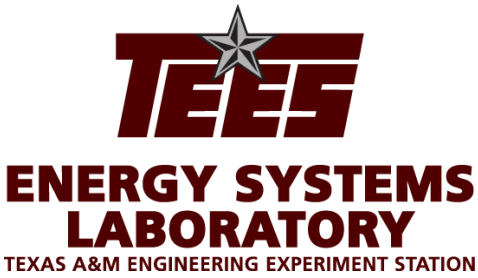

TAMU Project

Energy Consumption Data Quality Assurance/Quality Control Assessment Report for the

Month of August 2016

Prepared for

Utility & Energy Services

Division of Administration

Texas A&M University

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Acknowledgements

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Executive Summary

This report analyzes the energy use data collected from 579 meters in 199 buildings and complexes (approximately 20,000,000 GSF) on the campus of Texas A&M University in College Station, Texas. The report consists of five sections: 1) The summary of the monthly energy consumption per meter ID, 2) The quality control and assurance analysis of incorrect or incomplete energy use patterns, 3) Energy consumption time series plots, 4) Energy Balance plots, and 5) Energy Balance plots with filled-in consumption data. Section one contains the summary of monthly energy consumption for each of the TAMU buildings. Section two includes the reviews on each of those building energy use patterns that presented problems in the metered data. Section three and four are a collection of the plots generated for the energy use analysis, as reference to indicate and validate the quality of the metered energy data. The Section five includes the energy balance plots with filled-in energy data.

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I. Summary of Monthly Consumption

Table I-1 August 2016 Monthly Consumption for TAMU Buildings

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
0270	Emerging Technologies Building	305,316	007469	ELE	195,755	kWh	
0270	Emerging Technologies Building	305,316	007470	ELE	52,918	kWh	
0270	Emerging Technologies Building	305,316	007471	CHW	4,024,815	mBtu	
0270	Emerging Technologies Building	305,316	007475	HHW	238,664	mBtu	
0275	Liberal Arts and Arts & Humanities Building	107,500	007715	ELE	55,546	kWh	
0275	Liberal Arts and Arts & Humanities Building	107,500	007716	CHW	628,503	mBtu	
0275	Liberal Arts and Arts & Humanities Building	107,500	007717	HHW	42,977	mBtu	
0290	Wells Residence Hall	67,283	006870	ELE	47,224	kWh	
0290	Wells Residence Hall	67,283	001984	CHW	1,060,052	mBtu	(2)
0290	Wells Residence Hall	67,283	001988	HHW	358,147	mBtu	(2)
0291	Rudder Residence Hall	67,283	000351	ELE	51,235	kWh	
0291	Rudder Residence Hall	67,283	002132	CHW	885,890	mBtu	(1), (2)
0291	Rudder Residence Hall	67,283	002136	HHW	251,503	mBtu	(1), (2)
0292	Eppright Residence Hall	67,283	000002	ELE	41,511	kWh	
0292	Eppright Residence Hall	67,283	002262	CHW	725,529	mBtu	
0292	Eppright Residence Hall	67,283	002266	HHW	210,098	mBtu	
0293	Appelt Residence Hall	82,767	000003	ELE	47,265	kWh	
0293	Appelt Residence Hall	82,767	002062	CHW	952,860	mBtu	(2)
0293	Appelt Residence Hall	82,767	002066	HHW	301,510	mBtu	(2)
0294	Lechner Residence Hall	59,541	000004	ELE	46,131	kWh	
0294	Lechner Residence Hall	59,541	002285	CHW	749,087	mBtu	
0294	Lechner Residence Hall	59,541	002289	HHW	415,644	mBtu	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006536	ELE	104,744	kWh	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006537	ELE	100,488	kWh	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006534	CHW	1,455,883	mBtu	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006535	HHW	180,586	mBtu	
0353	Bright Aerospace Building	148,837	001569	ELE	154,852	kWh	
0353	Bright Aerospace Building	148,837	002746	CHW	2,083,885	mBtu	(2)
0353	Bright Aerospace Building	148,837	002757	HHW	53,543	mBtu	(2)
0358	Davis Football Player Development Center	20,026	007699	ELE	27,273	kWh	
0358	Davis Football Player Development Center	20,026	007701	CHW	242,326	mBtu	(2)
0358	Davis Football Player Development Center	20,026	007702	HHW	3,520	mBtu	
0361	Bright Football Complex	124,971	008461	ELE	223,394	kWh	
0361	Bright Football Complex	124,971	002547	CHW	2,056,209	mBtu	
0361	Bright Football Complex	124,971	002551	HHW	136,187	mBtu	
0367	Kyle Field	489,000	000336	ELE	192,710	kWh	*
0367	Kyle Field	489,000	008861	ELE	115,010	kWh	
0367	Kyle Field	489,000	008862	ELE	139,507	kWh	
0367	Kyle Field	489,000	008863	ELE	204,871	kWh	
0367	Kyle Field	489,000	008864	ELE	207,973	kWh	
0367	Kyle Field	489,000	008865	ELE	91,015	kWh	
0367	Kyle Field	489,000	008866	ELE	151,886	kWh	
0367	Kyle Field	489,000	008867	ELE	211,353	kWh	
0367	Kyle Field	489,000	008868	ELE	94,773	kWh	
0367	Kyle Field	489,000	008852	CHW	4,382,190	mBtu	(1)
0367	Kyle Field	489,000	008026	CHW	5,556,192	mBtu	
0367	Kyle Field	489,000	008856	HHW	186,895	mBtu	
0367	Kyle Field	489,000	008027	HHW	656,204	mBtu	
0376	Chemistry Building Addition	115,797	006229	ELE	189,123	kWh	
0376	Chemistry Building Addition	115,797	006230	ELE	118,826	kWh	
0376	Chemistry Building Addition	115,797	007115	CHW	5,536,393	mBtu	
0376	Chemistry Building Addition	115,797	007119	HHW	723,660	mBtu	(1)
0383	Koldus Building	110,272	001488	ELE	172,169	kWh	
0383	Koldus Building	110,272	002863	CHW	1,114,969	mBtu	(2)
0383	Koldus Building	110,272	002874	HHW	134,153	mBtu	(2)
0384	Sanders Corps of Cadets Center	19,363	001554	ELE	24,269	kWh	
0384	Sanders Corps of Cadets Center	19,363	002583	CHW	254,178	mBtu	
0384	Sanders Corps of Cadets Center	19,363	002587	HHW	65,087	mBtu	
0325-0385	CE TTI Office & Lab Building	157,844	009122	ELE	158,935	kWh	
0325-0385	CE TTI Office & Lab Building	157,844	009123	CHW	1,569,737	mBtu	
0325-0385	CE TTI Office & Lab Building	157,844	009124	HHW	90,666	mBtu	
0386	Jack E. Brown Chemical Engineering Building	205,000	001428	ELE	169,125	kWh	
0386	Jack E. Brown Chemical Engineering Building	205,000	001429	ELE	356,856	kWh	
0386	Jack E. Brown Chemical Engineering Building	205,000	002250	CHW	6,549,738	mBtu	
0386	Jack E. Brown Chemical Engineering Building	205,000	006871	CHW	110,819	mBtu	
0386	Jack E. Brown Chemical Engineering Building	205,000	002254	HHW	526,331	mBtu	

Table I-1 August 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
0387	Richardson Petroleum Engineering Building	113,700	005870	ELE	83,405	kWh	
0387	Richardson Petroleum Engineering Building	113,700	005872	ELE	103,512	kWh	
0387	Richardson Petroleum Engineering Building	113,700	005805	CHW	1,877,851	mBtu	
0387	Richardson Petroleum Engineering Building	113,700	005809	HHW	131,173	mBtu	(1)
0391-0392	James J. Cain'51 and Mechanical Engineering Office Building	173,481	001573	ELE	206,871	kWh	
0391-0392	James J. Cain'51 and Mechanical Engineering Office Building	173,481	002906	CHW	1,934,055	mBtu	
0391-0392	James J. Cain'51 and Mechanical Engineering Office Building	173,481	002910	HHW	155,346	mBtu	
0394	Underwood Residence Hall	81,730	000014	ELE	56,110	kWh	(2)
0394	Underwood Residence Hall	81,730	002117	CHW	NA	mBtu	*
0394	Underwood Residence Hall	81,730	002121	HHW	NA	mBtu	*
0398	Langford Architecture Center Building A	116,619	003806	ELE	110,037	kWh	
0398	Langford Architecture Center Building A	116,619	003951	CHW	1,060,147	mBtu	
0398	Langford Architecture Center Building A	116,619	003955	HHW	15,261	mBtu	
0400-0402-1405	Spence Hall, Briggs Hall, and Ash II LLC	NA	009386	ELE	84,860	kWh	*
0400	Spence Hall Dorm 1	31,952	009290	ELE	12,397	kWh	
0400	Spence Hall Dorm 1	31,952	009291	ELE	13,762	kWh	
0400-1405	Spence Hall and Ash II LLC	NA	009292	CHW	990,891	mBtu	*
0400-1405	Spence Hall and Ash II LLC	NA	009296	HHW	200,482	mBtu	*
1405	Ash II LLC	NA	009387	CHW	132,634	mBtu	*
1405	Ash II LLC	NA	009391	HHW	41,786	mBtu	*
0402	Briggs Hall Dorm 3	32,139	009322	ELE	17,133	kWh	
0402	Briggs Hall Dorm 3	32,139	009323	ELE	11,553	kWh	
0402	Briggs Hall Dorm 3	32,139	009324	CHW	595,504	mBtu	
0402	Briggs Hall Dorm 3	32,139	009328	HHW	50,124	mBtu	*, (2)
0401-0403-1404	Kiest Hall, Fountain Hall, and Plank LLC	NA	009370	ELE	77,529	kWh	
0401	Kiest Hall Dorm 2	35,967	009306	ELE	13,256	kWh	
0401	Kiest Hall Dorm 2	35,967	009307	ELE	11,535	kWh	
0401-1404	Kiest Hall, and Plank LLC	NA	009308	CHW	1,073,793	mBtu	
0401-1404	Kiest Hall, and Plank LLC	NA	009312	HHW	228,306	mBtu	*, (2)
1404	Plank LLC	NA	009372	CHW	NA	mBtu	*
1404	Plank LLC	NA	009376	HHW	NA	mBtu	*
0403	Fountain Hall Dorm 4	36,893	009338	ELE	14,154	kWh	*
0403	Fountain Hall Dorm 4	36,893	009339	ELE	10,320	kWh	
0403	Fountain Hall Dorm 4	36,893	009340	CHW	492,929	mBtu	
0403	Fountain Hall Dorm 5	36,893	009344	HHW	65,354	mBtu	*, (2)
0404-0406-1403	Gainer Hall, Leonard Hall and Ash LLC	88,083	009401	ELE	63,260	kWh	
0406-1403	Leonard Hall - Dorm 7 and Ash LLC	54,179	007982	CHW	657,866	mBtu	
0406-1403	Leonard Hall - Dorm 7 and Ash LLC	54,179	007983	HHW	37,096	mBtu	(2)
0406	Leonard Hall - Dorm 7	36,893	008011	ELE	12,929	kWh	
0406	Leonard Hall - Dorm 7	36,893	008012	ELE	12,185	kWh	*
1403	H. Grady Ash, Jr. '58 Leadership Learning Center	17,286	008005	CHW	166,399	mBtu	
1403	H. Grady Ash, Jr. '58 Leadership Learning Center	17,286	008006	HHW	255	mBtu	
0404	Gainer Hall Dorm 5	33,904	009354	ELE	13,053	kWh	*
0404	Gainer Hall Dorm 5	33,904	009355	ELE	11,157	kWh	*
0404	Gainer Hall Dorm 5	33,904	009356	CHW	507,049	mBtu	
0404	Gainer Hall Dorm 5	33,904	009360	HHW	48,270	mBtu	*, (2)
0405-0407-1402	Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center	91,310	007721	ELE	66,849	kWh	
0407-1402	Harrell Hall - Dorm 8 and Buzbee LLC	54,443	007722	CHW	753,962	mBtu	(2)
0407-1402	Harrell Hall - Dorm 8 and Buzbee LLC	54,443	007723	HHW	40,267	mBtu	(2)
0405	Lacy Hall - Dorm 6	36,867	007922	ELE	24,910	kWh	
0405	Lacy Hall - Dorm 6	36,867	007918	CHW	444,389	mBtu	(2)
0405	Lacy Hall - Dorm 6	36,867	007919	HHW	52,514	mBtu	(2)
0407	Harrell Hall - Dorm 8	36,943	007729	ELE	23,478	kWh	
1402	Buzbee Leadership Learning Center	17,500	007725	CHW	245,280	mBtu	(1), (2)
1402	Buzbee Leadership Learning Center	17,500	007726	HHW	7,967	mBtu	(1), (2)
0412	Moses Residence Hall	40,828	000027	ELE	31,421	kWh	
0412	Moses Residence Hall	40,828	002384	CHW	778,867	mBtu	(2)
0412	Moses Residence Hall	40,828	002395	HHW	182,072	mBtu	
0415	Davis-Gary Residence Hall	40,828	000030	ELE	28,666	kWh	
0415	Davis-Gary Residence Hall	40,828	002532	CHW	708,407	mBtu	
0415	Davis-Gary Residence Hall	40,828	002543	HHW	138,630	mBtu	
0419	Legett Residence Hall	45,134	000031	ELE	16,563	kWh	
0419	Legett Residence Hall	45,134	002218	CHW	261,537	mBtu	*
0419	Legett Residence Hall	45,134	002222	HHW	46,340	mBtu	*

Table I-1 August 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
0420	Milner Hall	48,268	009144	ELE	25,474	kWh	
0420	Milner Hall	48,268	009145	CHW	367,107	mBtu	
0420	Milner Hall	48,268	009146	HHW	33,994	mBtu	
0422	Walton Residence Hall	51,494	000378	ELE	95,933	kWh	
0422	Walton Residence Hall	51,494	002364	HHW	43,347	mBtu	
0424	Hotard Hall	18,500	000032	ELE	14,513	kWh	
0424	Hotard Hall	18,500	002657	CHW	212,847	mBtu	
0424	Hotard Hall	18,500	002668	HHW	40,541	mBtu	
0425	Henderson Hall	22,185	001553	ELE	16,147	kWh	
0425	Henderson Hall	22,185	002607	CHW	335,379	mBtu	(2)
0425	Henderson Hall	22,185	002611	HHW	76,868	mBtu	
0426-0427-0428	FHK Complex	154,349	000331	ELE	106,697	kWh	*
0426-0427-0428	FHK Complex	154,349	002848	CHW	1,639,523	mBtu	
0426-0427-0428	FHK Complex	154,349	002859	HHW	138,648	mBtu	
0430	Schumacher Residence Hall	38,957	000034	ELE	28,681	kWh	
0430	Schumacher Residence Hall	38,957	002015	CHW	500,664	mBtu	
0430	Schumacher Residence Hall	38,957	002030	HHW	26,211	mBtu	
0359	Architecture Building B	28,545	005518	ELE	21,649	kWh	
0432	Architecture Building C	73,020	005584	ELE	76,604	kWh	
0359-0432	Architecture Building B&C	101,565	006419	CHW	847,662	mBtu	
0359-0432	Architecture Building B&C	101,565	006423	HHW	198,716	mBtu	
0434	Luedecke Building (Cyclotron)	80,646	005555	ELE	140,963	kWh	
0434	Luedecke Building (Cyclotron)	80,646	005558	ELE	1,050,563	kWh	
0434	Luedecke Building (Cyclotron)	80,646	006664	CHW	2,234,038	mBtu	
0434	Luedecke Building (Cyclotron)	80,646	006668	HHW	45,568	mBtu	
0435	Harrington Education Center Office Tower	130,844	001546	ELE	122,490	kWh	
0435	Harrington Education Center Office Tower	130,844	002792	CHW	1,289,368	mBtu	
0435	Harrington Education Center Office Tower	130,844	002796	HHW	332,146	mBtu	
0436	Reed-McDonald Building	77,435	006868	ELE	91,057	kWh	
0436	Reed-McDonald Building	77,435	002419	CHW	2,401,086	mBtu	
0436	Reed-McDonald Building	77,435	002423	HHW	284,666	mBtu	
0438	Harrington Education Center Classroom Building	61,860	003630	ELE	34,383	kWh	
0438	Harrington Education Center Classroom Building	61,860	002784	CHW	347,060	mBtu	
0438	Harrington Education Center Classroom Building	61,860	002788	HHW	1,375	mBtu	
0433-0440-0441-04	Mosher Commons Krueger Dunn Aston	577,584	009099	ELE	320,955	kWh	
0433	Mosher Residence Hall	155,430	009083	ELE	84,539	kWh	(2)
0433	Mosher Residence Hall	155,430	002485	CHW	2,036,567	mBtu	(2)
0433	Mosher Residence Hall	155,430	002489	HHW	747,733	mBtu	(2)
0440	Commons Hall	84,500	009237	CHW	NA	mBtu	*
0440	Commons Hall	84,500	009238	HHW	NA	mBtu	*
0441	Krueger Residence Hall	112,133	009091	ELE	73,226	kWh	
0441	Krueger Residence Hall	112,133	002504	CHW	1,166,892	mBtu	#, (1)
0441	Krueger Residence Hall	112,133	002500	HHW	602,893	mBtu	#, (1)
0442	Dunn Residence Hall	112,133	009095	ELE	101,963	kWh	
0442	Dunn Residence Hall	112,133	002519	CHW	1,041,631	mBtu	
0442	Dunn Residence Hall	112,133	002515	HHW	239,610	mBtu	
0447	Aston Residence Hall	113,388	009087	ELE	61,126	kWh	
0447	Aston Residence Hall	113,388	002474	CHW	1,263,224	mBtu	
0447	Aston Residence Hall	113,388	002470	HHW	379,715	mBtu	
0443	Oceanography & Meteorology Building	180,316	005322	ELE	168,614	kWh	
0443	Oceanography & Meteorology Building	180,316	005323	ELE	63,115	kWh	
0443	Oceanography & Meteorology Building	180,316	006388	CHW	1,386,999	mBtu	*
0443	Oceanography & Meteorology Building	180,316	006392	HHW	218,592	mBtu	*
0444	Peterson Building	84,831	004714	ELE	154,581	kWh	
0444	Peterson Building	84,831	002922	CHW	1,404,429	mBtu	
0444	Peterson Building	84,831	006435	HHW	124,145	mBtu	
0445-0517	Teague Research Center and DPC Annex	89,735	003948	ELE	27,308	kWh	
0445-0517	Teague Research Center and DPC Annex	89,735	004719	ELE	53,212	kWh	
0445	Teague Research Center	63,515	006411	CHW	455,699	mBtu	
0445	Teague Research Center	63,515	006415	HHW	24,905	mBtu	
0517	DPC Annex	26,220	006563	CHW	682,635	mBtu	
0517	DPC Annex	26,220	006567	HHW	255,133	mBtu	
0446	Rudder Theatre Complex	209,293	002977	ELE	103,593	kWh	
0446	Rudder Theatre Complex	209,293	002980	ELE	27,400	kWh	
0446	Rudder Theatre Complex	209,293	004297	CHW	2,018,731	mBtu	(2)
0446	Rudder Theatre Complex	209,293	004309	HHW	592,509	mBtu	(2)
0446	Rudder Tower	92,947	001550	ELE	39,284	kWh	
0446	Rudder Tower	92,947	001551	ELE	57,554	kWh	
0446	Rudder Tower	92,947	002455	CHW	1,016,393	mBtu	
0446	Rudder Tower	92,947	002459	HHW	17,702	mBtu	(1)

Table I-1 August 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
0448	Adams Band Hall	55,248	000978	ELE	62,494	kWh	
0448	Adams Band Hall	55,248	002555	CHW	524,687	mBtu	(1)
0448	Adams Band Hall	55,248	002566	HHW	260,252	mBtu	(1)
0449	Biological Sciences Building - West	96,038	003978	ELE	191,603	kWh	
0449	Biological Sciences Building - West	96,038	003981	CHW	1,836,290	mBtu	
0449	Biological Sciences Building - West	96,038	003985	HHW	96,759	mBtu	
0450	Duncan Dining Hall	128,482	000300	ELE	108,795	kWh	
0450	Duncan Dining Hall	128,482	002998	CHW	1,224,850	mBtu	(1)
0450	Duncan Dining Hall	128,482	003009	HHW	118,199	mBtu	(1)
0454	MSC (East Main)	392,000	007600	ELE	316,787	kWh	
0454	MSC (West Main)	392,000	007601	ELE	207,936	kWh	
0454	MSC BOR	392,000	008047	ELE	17,893	kWh	
0454	MSC	392,000	007584	CHW	4,190,759	mBtu	
0454	MSC BOR	392,000	004184	CHW	568,503	mBtu	
0454	MSC	392,000	007585	HHW	274,100	mBtu	
0454	MSC BOR	392,000	004196	HHW	213,168	mBtu	
0456	Military Sciences Building	43,808	006939	CHW	620,942	mBtu	
0456	Military Sciences Building	43,808	006943	HHW	186,378	mBtu	
0457	TAES Annex Building	16,364	005863	ELE	14,436	kWh	
0457	TAES Annex Building	16,364	005913	CHW	123,946	mBtu	
0457	TAES Annex Building	16,364	005917	HHW	35,031	mBtu	
0461	Coke Building	24,466	004008	ELE	26,190	kWh	
0461	Coke Building	24,466	005307	CHW	162,050	mBtu	
0461	Coke Building	24,466	004023	HHW	362	mBtu	
0462	Academic Building	82,555	005861	ELE	18,954	kWh	
0462	Academic Building	82,555	005903	ELE	34,339	kWh	
0462	Academic Building	82,555	005905	CHW	762,155	mBtu	#, (1)
0462	Academic Building	82,555	005909	HHW	334,958	mBtu	#, (1)
0463	Psychology Building	48,215	001575	ELE	41,544	kWh	
0463	Psychology Building	48,215	002941	CHW	611,167	mBtu	
0463	Psychology Building	48,215	002945	HHW	23,912	mBtu	
0464	State Chemist Building	20,027	005839	ELE	13,672	kWh	
0464	State Chemist Building	20,027	005837	ELE	9,340	mBtu	
0464	State Chemist Building	20,027	005841	HHW	194	mBtu	
0465	Butler Hall	29,699	003997	ELE	34,900	kWh	
0465	Butler Hall	29,699	004000	CHW	466,347	mBtu	
0465	Butler Hall	29,699	004004	HHW	99,053	mBtu	
0467	Biological Sciences Building - East	62,273	001543	ELE	191,790	kWh	
0467	Biological Sciences Building - East	62,273	003851	CHW	1,090,934	mBtu	#
0467	Biological Sciences Building - East	62,273	003862	HHW	93,548	mBtu	
0468	Evans Library	712,093	000304	ELE	256,397	kWh	
0468	Evans Library	712,093	000318	ELE	138,476	kWh	*
0468	Evans Library	712,093	000319	ELE	94,270	kWh	
0468	Evans Library	712,093	000320	ELE	77,661	kWh	
0468	Evans Library	712,093	006429	ELE	86,167	kWh	
0468	Evans Library	712,093	003701	CHW	1,758,781	mBtu	
0468	Evans Library	712,093	003895	CHW	1,998,223	mBtu	
0468	Evans Library	712,093	003903	CHW	350,824	mBtu	*
0468	Evans Library	712,093	003911	CHW	1,561,129	mBtu	*
0468	Evans Library	712,093	003712	HHW	178,727	mBtu	
0468	Evans Library	712,093	003899	HHW	272,890	mBtu	
0468	Evans Library	712,093	003907	HHW	53,257	mBtu	*
0468	Evans Library	712,093	003922	HHW	45,625	mBtu	*
0468	Evans Library	712,093	005303	HHW	21,880	mBtu	*
0469	Central Campus Parking Garage	251,304	000306	ELE	47,296	kWh	*
0469	Central Campus Parking Garage	2,844	003716	CHW	72,509	mBtu	
0469	Central Campus Parking Garage	2,844	003720	HHW	4,350	mBtu	
0470	Glasscock History Bldg	39,887	006407	ELE	20,252	kWh	
0470	Glasscock History Bldg	39,887	006638	CHW	302,403	mBtu	
0470	Glasscock History Bldg	39,887	006642	HHW	5,335	mBtu	
0471	Pavilion	40,062	001455	ELE	39,889	kWh	
0471	Pavilion	40,062	002769	CHW	344,523	mBtu	
0471	Pavilion	40,062	002780	HHW	2,672	mBtu	(2)
0472	Animal Industries	44,856	009042	ELE	45,961	kWh	
0472	Animal Industries	44,856	009109	CHW	740,284	mBtu	
0472	Animal Industries	44,856	009113	HHW	3,822	mBtu	
0473	Williams Administration Building	69,898	007945	ELE	53,007	kWh	
0473	Williams Administration Building	69,898	007946	CHW	733,253	mBtu	
0473	Williams Administration Building	69,898	007947	HHW	110,587	mBtu	

Table I-1 August 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
0474	YMCA Building	36,035	007524	ELE	27,048	kWh	
0474	YMCA Building	36,035	007525	CHW	266,544	mBtu	
0474	YMCA Building	36,035	007526	HHW	7,988	mBtu	
0476	Francis Hall	36,850	008015	ELE	39,178	kWh	*
0476	Francis Hall	36,850	008033	CHW	605,881	mBtu	
0476	Francis Hall	36,850	008034	HHW	186	mBtu	
0477	Anthropology Building	51,592	001558	ELE	31,708	kWh	
0477	Anthropology Building	51,592	003664	CHW	662,571	mBtu	
0477	Anthropology Building	51,592	003668	HHW	21,400	mBtu	
0478	Scoates Hall	62,228	007961	ELE	51,670	kWh	(2)
0478	Scoates Hall	62,228	007968	CHW	554,271	mBtu	(2)
0478	Scoates Hall	62,228	007969	HHW	40,012	mBtu	(2)
0480	Bolton Hall	39,686	006845	ELE	32,723	kWh	
0480	Bolton Hall	39,686	007012	CHW	254,636	mBtu	
0480	Bolton Hall	39,686	007016	HHW	38,092	mBtu	
0481	Heaton Hall	13,640	005712	ELE	NA	kWh	*
0481	Heaton Hall	13,640	007531	CHW	292,717	mBtu	
0481	Heaton Hall	13,640	007535	HHW	168,137	mBtu	
0482	Fermier Hall	19,074	005779	ELE	25,695	kWh	
0482	Fermier Hall	19,074	005878	CHW	279,422	mBtu	
0482	Fermier Hall	19,074	005881	HHW	58,596	mBtu	# (1)
0483	Thompson Hall	81,404	003688	ELE	58,680	kWh	
0483	Thompson Hall	81,404	003887	CHW	364,836	mBtu	# (1)
0483	Thompson Hall	81,404	003891	HHW	13,555	mBtu	
0484	Chemistry Building	205,393	007152	ELE	88,623	kWh	*
0484	Chemistry Building	205,393	007556	ELE	13,651	kWh	
0484	Chemistry Building	205,393	007557	ELE	86,061	kWh	
0484	Chemistry Building	205,393	007559	ELE	184,674	kWh	
0484	Chemistry Building	205,393	007028	CHW	3,442,891	mBtu	
0484	Chemistry Building	205,393	007223	CHW	6,199,411	mBtu	
0484	Chemistry Building	205,393	007032	HHW	349,698	mBtu	
0484	Chemistry Building	205,393	007227	HHW	709,391	mBtu	
0490	Halbouty Geosciences Building	120,874	006691	ELE	63,515	kWh	
0490	Halbouty Geosciences Building	120,874	006695	ELE	105,169	kWh	
0490	Halbouty Geosciences Building	120,874	006896	CHW	1,849,528	mBtu	
0490	Halbouty Geosciences Building	120,874	006913	CHW	896,800	mBtu	
0490	Halbouty Geosciences Building	120,874	006900	HHW	315,492	mBtu	
0490	Halbouty Geosciences Building	120,874	006917	HHW	178,817	mBtu	
0492	Civil Engineering Building	56,537	005783	ELE	67,915	kWh	
0492	Civil Engineering Building	56,537	005950	CHW	538,307	mBtu	
0492	Civil Engineering Building	56,537	005954	HHW	121,298	mBtu	# (1)
0495	Sbisa Dining Hall	94,233	000352	ELE	130,269	kWh	
0495	Sbisa Dining Hall	94,233	000353	ELE	92,141	kWh	
0495	Sbisa Dining Hall	94,233	001951	CHW	1,993,168	mBtu	
0495	Sbisa Dining Hall	94,233	001957	HHW	244,946	mBtu	
0496	Utilities & Energy Services Central Office	46,110	007706	ELE	12,914	kWh	(2)
0496	Utilities & Energy Services Central Office	46,110	006929	CHW	217,110	mBtu	(2)
0496	Utilities & Energy Services Central Office	46,110	006933	HHW	28,815	mBtu	(2)
0499	Engineering Innovation Center	28,339	001561	ELE	23,780	kWh	
0499	Engineering Innovation Center	28,339	002672	CHW	111,117	mBtu	* (2)
0499	Engineering Innovation Center	28,339	002683	HHW	9,454	mBtu	*
0501	Concrete Materials Laboratory	9,600	005791	ELE	7,830	kWh	
0506	Nagle Hall	32,306	001484	ELE	11,819	kWh	(2)
0506	Nagle Hall	32,306	003619	CHW	509,503	mBtu	
0506	Nagle Hall	32,306	003623	HHW	11,997	mBtu	
0507	Veterinary Medical Science Building	69,367	003013	ELE	82,053	kWh	
0507	Veterinary Medical Science Building	69,367	003640	CHW	1,749,787	mBtu	*
0507	Veterinary Medical Science Building	69,367	003644	HHW	335,748	mBtu	*
0508	Veterinary Teaching Hospital	96,416	003022	ELE	103,186	kWh	
0508-1026	Veterinary Teaching Hospital and Veterinary Medicine Administration	191,096	004166	CHW	2,526,838	mBtu	
0508-1026	Veterinary Teaching Hospital and Veterinary Medicine Administration	191,096	004170	HHW	324,767	mBtu	
0511	Heep Laboratory Building	40,476	005787	ELE	66,364	kWh	
0511	Heep Laboratory Building	40,476	005821	CHW	644,500	mBtu	# (1)
0511	Heep Laboratory Building	40,476	005825	HHW	150,428	mBtu	
0512	All Faiths Chapel	8,999	004340	ELE	7,600	kWh	
0512	All Faiths Chapel	8,999	004288	CHW	117,199	mBtu	# (1)
0512	All Faiths Chapel	8,999	004293	HHW	27,455	mBtu	# (1)
0513	Doherty Building	42,336	000299	ELE	58,421	kWh	
0513	Doherty Building	42,336	002898	CHW	1,168,907	mBtu	
0513	Doherty Building	42,336	002902	HHW	262,042	mBtu	

Table I-1 August 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
0514	Munnerlyn Astronomy & Space Sciences Engineering	22,134	007558	ELE	14,406	kWh	
0514	Munnerlyn Astronomy & Space Sciences Engineering	22,134	007487	CHW	132,730	mBtu	
0514	Munnerlyn Astronomy & Space Sciences Engineering	22,134	007491	HHW	2,396	mBtu	
0516	Computing Services Center	30,014	005259	ELE	522,613	kWh	# (1)
0516	Computing Services Center	30,014	003959	CHW	1,525,539	mBtu	
0516	Computing Services Center	30,014	003963	HHW	2	mBtu	
0520	Beutel Health Center	63,318	003785	ELE	73,278	kWh	(2)
0520	Beutel Health Center	63,318	003933	CHW	560,752	mBtu	(2)
0520	Beutel Health Center	63,318	003944	HHW	38,718	mBtu	
0521	Heldenfels Hall	104,949	001547	ELE	94,796	kWh	
0521	Heldenfels Hall	104,949	002962	CHW	1,450,384	mBtu	
0521	Heldenfels Hall	104,949	002973	HHW	158,433	mBtu	
0524	Blocker building	257,953	001545	ELE	202,998	kWh	
0524	Blocker building	257,953	002914	CHW	1,601,535	mBtu	
0524	Blocker building	257,953	002918	HHW	3,799	mBtu	(2)
0548	Clements Residence Hall	62,156	000048	ELE	34,059	kWh	
0548	Clements Residence Hall	62,156	002729	CHW	1,249,282	mBtu	
0548	Clements Residence Hall	62,156	002740	HHW	377,242	mBtu	
0549	Haas Residence Hall	69,668	001398	ELE	42,468	kWh	*
0549	Haas Residence Hall	69,668	002983	CHW	1,172,392	mBtu	
0549	Haas Residence Hall	69,668	002994	HHW	549,051	mBtu	
0550	McFadden Residence Hall	62,156	000339	ELE	35,721	kWh	
0550	McFadden Residence Hall	62,156	002188	CHW	1,075,276	mBtu	
0550	McFadden Residence Hall	62,156	002192	HHW	471,335	mBtu	
0652	Neeley Residence Hall	69,668	000056	ELE	46,826	kWh	
0652	Neeley Residence Hall	69,668	002147	CHW	690,709	mBtu	# (1)
0652	Neeley Residence Hall	69,668	002151	HHW	195,581	mBtu	# (1)
0653	Hobby Residence Hall	62,156	000057	ELE	39,754	kWh	
0653	Hobby Residence Hall	62,156	002401	CHW	921,490	mBtu	
0653	Hobby Residence Hall	62,156	002405	HHW	312,272	mBtu	
0682	Wisenbaker Engineering Research Center	177,704	005246	ELE	267,859	kWh	
0682	Wisenbaker Engineering Research Center	177,704	003879	CHW	2,250,697	mBtu	
0682	Wisenbaker Engineering Research Center	177,704	003883	HHW	130,038	mBtu	
0740	McNew Laboratory	20,904	005874	ELE	52,407	kWh	*
0740	McNew Laboratory	20,904	005974	CHW	586,911	mBtu	
0740	McNew Laboratory	20,904	005968	HHW	84,196	mBtu	# (1)
0806	Soil Testing Labs	5,544	006875	ELE	27,824	kWh	
0815	Entomology Research Lab	17,618	005799	ELE	32,324	kWh	
0815	Entomology Research Lab	17,618	006043	CHW	146,272	mBtu	
0880	TVMC-Small Animal Building	3,260	005958	CHW	39,114	mBtu	# (1)
0880	TVMC-Small Animal Building	3,260	005962	HHW	33	mBtu	(2)
0972	Laboratory Animal Care Building	52,178	007063	ELE	145,068	kWh	
0972	Laboratory Animal Care Building	52,178	007067	ELE	52,682	kWh	
0972	Laboratory Animal Care Building	52,178	007071	CHW	3,928,414	mBtu	
0972	Laboratory Animal Care Building	52,178	006991	HHW	116,283	mBtu	
1020	Vivarium III	12,234	005857	ELE	23,755	kWh	
1020	Vivarium III	12,234	005997	CHW	275,327	mBtu	
1020	Vivarium III	12,234	006001	HHW	21,899	mBtu	
1026	Veterinary Medicine Administration	94,680	006072	ELE	131,556	kWh	
1026	Veterinary Medicine Administration	94,680	006049	CHW	1,567,654	mBtu	
1026	Veterinary Medicine Administration	98,680	006053	HHW	316,997	mBtu	* (2)
1041	Texas Vet Med Diagnostic Lab	55,169	001466	ELE	101,594	kWh	*
1041	Texas Vet Med Diagnostic Lab	55,169	001539	ELE	83,592	kWh	*
1041	Texas Vet Med Diagnostic Lab	55,169	003817	CHW	1,211,137	mBtu	*
1041	Texas Vet Med Diagnostic Lab	55,169	004137	CHW	2,010,424	mBtu	*
1041	Texas Vet Med Diagnostic Lab	55,169	003821	HHW	66,629	mBtu	*
1041	Texas Vet Med Diagnostic Lab	55,169	004130	HHW	167,015	mBtu	*
1042	Forest Science Laboratory Building	9,632	006036	ELE	35,250	kWh	
1085	Veterinary Small Animal Hospital	103,440	004136	ELE	241,602	kWh	
1085	Veterinary Small Animal Hospital	103,440	003656	CHW	2,714,515	mBtu	
1085	Veterinary Small Animal Hospital	103,440	003660	HHW	292,215	mBtu	
1089	Utilities Energy Office Annex	2,937	006964	ELE	5,882	kWh	
1146	Biological Control Facility	13,492	005795	ELE	36,967	kWh	(2)
1146	Biological Control Facility	13,492	005887	CHW	179,646	mBtu	
1146	Biological Control Facility	13,492	005891	HHW	34,415	mBtu	
1156	Physical Plant Administration & Shops	101,704	007483	ELE	160,493	kWh	*
1156	Physical Plant Administration & Shops	101,704	007679	CHW	592,254	mBtu	(2)
1156	Physical Plant Administration & Shops	101,704	007683	HHW	69,042	mBtu	
1184	Veterinary Anatomic Pathology	17,223	001445	ELE	54,307	kWh	
1184	Veterinary Anatomic Pathology	17,223	006995	CHW	833,771	mBtu	
1184	Veterinary Anatomic Pathology	17,223	006999	HHW	97,636	mBtu	

Table I-1 August 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
1194	Veterinary Large Animal Hospital	140,865	005256	ELE	110,057	kWh	
1194	Veterinary Large Animal Hospital	140,865	003016	ELE	68,148	kWh	
1194	Veterinary Large Animal Hospital	140,865	007455	ELE	41,583	kWh	
1194	Veterinary Large Animal Hospital	140,865	003648	CHW	3,293,080	mBtu	
1194	Veterinary Large Animal Hospital	140,865	007456	CHW	302,507	mBtu	
1194	Veterinary Large Animal Hospital	140,865	003652	HHW	531,566	mBtu	
1194	Veterinary Large Animal Hospital	140,865	007457	HHW	34,763	mBtu	
1197	Veterinary Research Building	114,666	006355	ELE	73,238	kWh	(2)
1197	Veterinary Research Building	114,666	006359	ELE	35,074	kWh	(2)
1197	Veterinary Research Building	114,666	006062	CHW	4,100,479	mBtu	
1197	Veterinary Research Building	114,666	006066	HHW	386,814	mBtu	
1416	Hullabaloo Residence Hall	253,452	007845	ELE	171,052	kWh	
1416	Hullabaloo Residence Hall	253,452	007846	CHW	1,565,224	mBtu	
1416	Hullabaloo Residence Hall	253,452	007847	HHW	104,782	mBtu	
1450	University Apartments - Laundry at the Gardens	1,428	006885	ELE	7,211	kWh	
1451	University Apartments - The Gardens J	33,535	006981	ELE	23,069	kWh	
1453	University Apartments - The Gardens L	33,535	006884	ELE	24,092	kWh	
1454	University Apartments - The Gardens F	33,535	006980	ELE	20,942	kWh	*
1455	University Apartments - The Gardens G	33,535	006882	ELE	22,063	kWh	*
1456	University Apartments - The Gardens H	33,535	007962	ELE	25,794	kWh	
1457	University Apartments - The Gardens M	33,535	007503	ELE	26,308	kWh	
1458	University Apartments - The Gardens N	33,535	007504	ELE	22,612	kWh	
1459	University Apartments - The Gardens P	33,535	007505	ELE	26,019	kWh	
1460	University Apartments - The Gardens Q	33,535	007506	ELE	22,496	kWh	
1497	Utilities & Energy Services Business Office	3,480	007082	ELE	4,128	kWh	
1497	Utilities & Energy Services Business Office	3,480	006341	CHW	35,603	mBtu	
1497	Utilities & Energy Services Business Office	3,480	006345	HHW	6	mBtu	
1501	Kleberg Center	165,031	007449	ELE	285,999	kWh	
1501	Kleberg Center	165,031	002624	CHW	2,423,734	mBtu	
1501	Kleberg Center	165,031	002628	HHW	567,025	mBtu	
1502	Heep Center	158,979	001556	ELE	325,474	kWh	
1502	Heep Center	158,979	002599	CHW	3,485,644	mBtu	
1502	Heep Center	158,979	002603	HHW	281,910	mBtu	
1503	Cater-Mattil Hall	27,958	007977	ELE	82,724	kWh	
1503	Cater-Mattil Hall	27,958	008001	CHW	852,278	mBtu	
1504	Reynolds Medical Sciences Building	169,859	003975	ELE	280,828	kWh	
1504	Reynolds Medical Sciences Building	169,859	003989	CHW	3,154,990	mBtu	
1504	Reynolds Medical Sciences Building	169,859	003993	HHW	366,425	mBtu	
1505	Rosenthal Meat Science & Technology Center	30,889	003627	ELE	144,826	kWh	
1505	Rosenthal Meat Science & Technology Center	30,889	002573	CHW	289,804	mBtu	
1505	Rosenthal Meat Science & Technology Center	30,889	002577	HHW	20,806	mBtu	
1506	Horticulture-Forest Science Building	118,648	001544	ELE	164,843	kWh	
1506	Horticulture-Forest Science Building	118,648	003967	CHW	1,280,884	mBtu	
1506	Horticulture-Forest Science Building	118,648	003971	HHW	101,417	mBtu	
1507	Biochemistry-Biophysics Building	166,079	001459	ELE	186,233	kWh	
1507	Biochemistry-Biophysics Building	166,079	001460	ELE	156,695	kWh	
1507	Biochemistry-Biophysics Building	166,079	003025	CHW	3,639,480	mBtu	
1507	Biochemistry-Biophysics Building	166,079	003029	HHW	619,538	mBtu	
1508	Price Hobgood Ag. Engineering Research Lab	27,666	005638	ELE	29,379	kWh	
1508	Price Hobgood Ag. Engineering Research Lab	27,666	006005	CHW	274,731	mBtu	
1508	Price Hobgood Ag. Engineering Research Lab	27,666	006009	HHW	622	mBtu	
1509	Medical Sciences Library	84,183	000350	ELE	102,682	kWh	
1509	Medical Sciences Library	84,183	003777	CHW	1,079,790	mBtu	
1509	Medical Sciences Library	84,183	003781	HHW	39,239	mBtu	
1510	Wehner Building	259,681	006849	ELE	205,508	kWh	
1510	Wehner Building	259,681	006685	ELE	256,866	kWh	
1510	Wehner Building	259,681	002687	CHW	2,427,783	mBtu	
1510	Wehner Building	259,681	002691	HHW	188,292	mBtu	
1511	West Campus Library Facility	68,125	004342	ELE	86,585	kWh	
1511	West Campus Library Facility	68,125	004313	CHW	877,943	mBtu	
1511	West Campus Library Facility	68,125	004318	HHW	127,631	mBtu	
1512	Southern Crop Improvement Greenhouse	48,154	005931	ELE	105,456	kWh	#, (1)
1513	Borlaug Center for Southern Crop Improvement	68,739	005802	ELE	321,384	kWh	
1513	Borlaug Center for Southern Crop Improvement	68,739	005936	CHW	2,204,026	mBtu	
1513	Borlaug Center for southern Crop Improvement	68,739	005895	HHW	151,491	mBtu	
1518	TX School of Rural Public Health A	69,079	005273	ELE	83,398	kWh	
1519	TX School of Rural Public Health B	24,761	005274	ELE	52,035	kWh	#, (1)
1520	TX School of Rural Public Health C	13,264	005275	ELE	102,331	kWh	#, (1)
1518-1519-1520	TX School of Rural Public Health A,B,C	107,104	005294	CHW	2,131,234	mBtu	
1518-1519-1520	TX School of Rural Public Health A,B,C	107,104	005298	HHW	135,441	mBtu	

Table I-1 August 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
1525	Nuclear Magnetic Resonance Facility	37,282	006718	ELE	89,282	kWh	*
1525	Nuclear Magnetic Resonance Facility	37,282	006715	CHW	1,312,763	mBtu	
1525	Nuclear Magnetic Resonance Facility	37,282	006716	HHW	359,761	mBtu	
1530	Interdisciplinary Life Sciences Building	218,540	006286	ELE	429,504	kWh	*
1530	Interdisciplinary Life Sciences Building	218,540	006288	ELE	213,257	kWh	
1530	Interdisciplinary Life Sciences Building	218,540	006290	CHW	5,999,615	mBtu	
1530	Interdisciplinary Life Sciences Building	218,540	006294	HHW	848,307	mBtu	
1535	Agriculture and Life Sciences Building	168,353	007205	ELE	121,686	kWh	
1535	Agriculture and Life Sciences Building	168,353	007206	CHW	982,796	mBtu	
1535	Agriculture and Life Sciences Building	168,353	007207	HHW	18,383	mBtu	
1536	AgriLife Services Building	80,907	007571	ELE	49,879	kWh	
1536	AgriLife Services Building	80,907	007572	CHW	374,644	mBtu	
1536	AgriLife Services Building	80,907	007573	HHW	14,968	mBtu	
1538	Agriculture Program Visitors Center	12,923	007209	ELE	13,719	kWh	
1538	Agriculture Program Visitors Center	12,923	007210	CHW	120,402	mBtu	
1538	Agriculture Program Visitors Center	12,923	007211	HHW	8,653	mBtu	
1540	Physical Education Activity Program Building	116,900	007881	ELE	69,664	kWh	
1540	Physical Education Activity Program Building	116,900	007878	CHW	671,814	mBtu	
1540	Physical Education Activity Program Building	116,900	007879	HHW	66,853	mBtu	
1550	Olsen Field at Bluebell Park	60,537	007560	ELE	126,507	kWh	
1554	Reed Arena	230,000	007582	ELE	159,081	kWh	
1554	Reed Arena	230,000	006243	ELE	858	kWh	#, (1)
1554	Reed Arena	230,000	006244	ELE	87,425	kWh	
1554-1558	Reed Arena and Cox-McFerrin Center	328,185	007576	CHW	3,218,767	mBtu	
1554-1558	Reed Arena and Cox-McFerrin Center	328,185	007578	HHW	560,038	mBtu	
1558	Cox-McFerrin Center for Aggie Basketball	98,185	007581	ELE	85,168	kWh	
1558	Cox-McFerrin Center for Aggie Basketball	98,185	007575	CHW	629,688	mBtu	(1)
1558	Cox-McFerrin Center for Aggie Basketball	98,185	007577	HHW	188,310	mBtu	
1559	West Campus Parking Garage	1,541,457	001453	ELE	183,961	kWh	
1559	West Campus Parking Garage	13,000	004322	CHW	94,608	mBtu	
1559	West Campus Parking Garage	13,000	004327	HHW	5,611	mBtu	
1560	Student Recreation Center	334,642	000363	ELE	294,980	kWh	
1560	Student Recreation Center	334,642	000366	ELE	457,981	kWh	
1560	Student Recreation Center	334,642	002933	CHW	6,697,619	mBtu	
1560	Student Recreation Center	334,642	002937	HHW	888,440	mBtu	(1)
1589-1590	White Creek Apartment 1 and White Creek Apts Activity Center	176,454	009197	ELE	101,200	kWh	
1589-1590	White Creek Apartment 1 and White Creek Apts Activity Center	176,454	009198	CHW	1,046,038	mBtu	
1589-1590	White Creek Apartment 1 and White Creek Apts Activity Center	176,454	009199	HHW	100,221	mBtu	
1591	White Creek Apartment 2	179,467	008528	ELE	114,407	kWh	
1591	White Creek Apartment 2	179,467	008529	CHW	903,405	mBtu	
1591	White Creek Apartment 2	179,467	008533	HHW	73,523	mBtu	
1592	White Creek Apartment 3	179,467	008538	ELE	100,495	kWh	
1592	White Creek Apartment 3	179,467	008539	CHW	961,604	mBtu	
1592	White Creek Apartment 3	179,467	008543	HHW	104,016	mBtu	
1600	Gilchrist TTI Building	67,143	005286	ELE	55,347	kWh	
1600	Gilchrist TTI Building	67,143	002649	CHW	606,457	mBtu	
1600	Gilchrist TTI Building	67,143	002653	HHW	48,137	mBtu	
1601	International Ocean Discovery Building	86,576	006351	ELE	131,244	kWh	(2)
1601	International Ocean Discovery Building	86,576	006382	CHW	344,280	mBtu	(2)
1601	International Ocean Discovery Building	86,576	008144	CHW	83,009	mBtu	(2)
1601	International Ocean Discovery Building	86,576	008145	HHW	10,052	mBtu	(2)
1604	Offshore Technology Research Center	40,014	006659	ELE	92,754	kWh	(2)
1604	Offshore Technology Research Center	40,014	006660	ELE	0	kWh	(2)
1604	Offshore Technology Research Center	40,014	008142	CHW	646,518	mBtu	(2)
1604	Offshore Technology Research Center	40,014	008143	HHW	97,386	mBtu	(2)
1606	George Bush Presidential Library & Museum	121,678	000244	ELE	120,862	kWh	
1606	George Bush Presidential Library & Museum	121,678	002808	CHW	1,704,221	mBtu	
1606	George Bush Presidential Library & Museum	121,678	002812	HHW	328,131	mBtu	
1607	Allen Building	133,327	000243	ELE	95,036	kWh	
1607	Allen Building	133,327	002800	CHW	777,488	mBtu	
1607	Allen Building	133,327	002804	HHW	9,412	mBtu	
1608	Annenberg Presidential Conference Center	65,688	000245	ELE	70,958	kWh	
1608	Annenberg Presidential Conference Center	65,688	002761	CHW	1,063,788	mBtu	
1608	Annenberg Presidential Conference Center	65,688	002765	HHW	286,100	mBtu	
1609	TTI Headquarters	66,707	006495	ELE	59,758	kWh	
1609	TTI Headquarters	66,707	006496	CHW	549,518	mBtu	
1609	TTI Headquarters	66,707	006497	HHW	34,892	mBtu	
1611	Engineering Research Building	68,807	008462	ELE	191,455	kWh	
1611	Engineering Research Building	68,807	008463	CHW	3,102,474	mBtu	
1611	Engineering Research Building	68,807	008467	HHW	448,586	mBtu	

Table I-1 August 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
1800	General Services Complex	203,369	005441	ELE	206,177	kWh	
1800	General Services Complex	203,369	005468	CHW	1,381,863	mBtu	
1800	General Services Complex	203,369	005472	HHW	45,679	mBtu	
1810	Office of the State Chemist Building	31,735	009073	ELE	62,521	kWh	*
1810	Office of the State Chemist Building	31,735	005460	CHW	813,779	mBtu	
1810	Office of the State Chemist Building	31,735	005464	HHW	69,895	mBtu	
1811	Vet Med Research Bldg Addition	52,993	006705	ELE	228,686	kWh	
1811	Vet Med Research Bldg Addition	52,993	006706	CHW	2,188,510	mBtu	
1811	Vet Med Research Bldg Addition	52,993	006707	HHW	320,789	mBtu	
1812-1813	Veterinary Medicine Building 1 and 2	254,952	009404	ELE	NA	kWh	*
1814	Veterinary Medicine Building 3	135,470	009405	ELE	NA	kWh	*
1812-1813-1814	Veterinary Medicine Building 1, 2, and 3	390,422	009406	CHW	NA	mBtu	*
1812-1813-1814	Veterinary Medicine Building 1, 2, and 3	390,422	009410	HHW	NA	mBtu	*
1900	Texas Institute for Genomic Medicine	34,120	005548	ELE	92,100	kWh	
1900	Texas Institute for Genomic Medicine	34,120	005545	CHW	2,337,373	mBtu	
1900	Texas Institute for Genomic Medicine	34,120	005546	HHW	289,346	mBtu	(1)
1904	Texas A&M Institute for Preclinical Studies A	113,559	006364	ELE	266,772	kWh	
1904	Texas A&M Institute for Preclinical Studies A	113,559	006365	CHW	4,065,165	mBtu	
1904	Texas A&M Institute for Preclinical Studies A	113,559	006366	HHW	603,722	mBtu	
1910	National Center for Therapeutics Manufacturing	149,924	007517	ELE	206,993	kWh	
1910	National Center for Therapeutics Manufacturing	149,924	007518	ELE	168,536	kWh	
1910	National Center for Therapeutics Manufacturing	149,924	007519	CHW	6,070,050	mBtu	#, (1)
1910	National Center for Therapeutics Manufacturing	149,924	007520	HHW	1,033,707	mBtu	
1911	Multi-Species Research Building	21,000	009138	ELE	24,644	kWh	
1911	Multi-Species Research Building	21,000	009129	CHW	592,903	mBtu	
1911	Multi-Species Research Building	21,000	009133	HHW	148,331	mBtu	
10226	NCTM Manufacturing Building	113,397	007648	CHW	5,156,733	mBtu	
10226	NCTM Manufacturing Building	113,397	007649	HHW	807,806	mBtu	
10226	NCTM Manufacturing Building	113,397	008133	HHW	112,623	mBtu	

1 mBtu = 1 000 Btu

NA: Not available
Monthly consumption in blue: Modified values
* : Missing data
# : Questionable data
(1): Consumption estimated and documented in the report *Part II - Data Analysis: Energy Use Estimation and Observations Section 2*
(2): Observation(s) documented in the report *Part II - Data Analysis: Energy Use Estimation and Observations Section 3*
(3): Missing data or changed consumption levels due to construction

II. Data Analysis: Energy Use Estimation and Observation

II-1 Meters with Missing Energy Consumption Data

During the month of August 2016, 58 meters in 35 buildings and complexes have missing daily data. The missing data have been filled in using consumption models based on the past data if available or using linear interpolation or some sort of average, and the monthly consumption has been estimated with the filled-in daily consumption. Table II-1 is the list of meters with missing data.

Table II-1 Meters with missing data during August 2016

Building No.	Building Name	MeterID	Type	Unit	Original Monthly Consumption	Estimated Monthly Consumption	# of Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0367	Kyle Field	000336	ELE	kWh	174,060	192,710	3	A	A	A																										
0394	Underwood Residence Hall	002117	CHW	mBtu	NA	***	31																													
0394	Underwood Residence Hall	002121	HHW	mBtu	NA	***	31																													
400-0402-140	Spence Hall, Briggs Hall, and Ash II LLC	009386	ELE	kWh	84,860	*	4																			A	A	A	A							
0400-1405	Spence Hall and Ash II LLC	009292	CHW	mBtu	990,891	*	8								A	A	A	A	A	A	A	A														
0400-1405	Spence Hall and Ash II LLC	009296	HHW	mBtu	200,482	*	9	A							A	A	A	A	A	A	A	A														
1405	Ash II LLC	009387	CHW	mBtu	132,634	***	23																													
1405	Ash II LLC	009391	HHW	mBtu	41,786	***	23																													
0402	Briggs Hall Dorm 3	009328	HHW	mBtu	49,330	50,124	1	A																												
0401-1404	Kiest Hall, and Plank LLC	009312	HHW	mBtu	228,306	*	1	A																												
1404	Plank LLC	009372	CHW	mBtu	NA	***	31																													
1404	Plank LLC	009376	HHW	mBtu	NA	***	31																													
0403	Fountain Hall Dorm 4	009338	ELE	kWh	7,075	14,154	16								A	A	A	A	A	A	A	A	A	A	A	A	A	A	A							
0403	Fountain Hall Dorm 5	009344	HHW	mBtu	64,143	65,354	1	A																												
0406	Leonard Hall - Dorm 7	008012	ELE	kWh	370,931	12,185	13	A	A	A	A	A	A	A	A	A	A	A	A	A																
0404	Gainer Hall Dorm 5	009354	ELE	kWh	14,277	13,053	17	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A												
0404	Gainer Hall Dorm 5	009355	ELE	kWh	10,403	11,157	12	A	A	A	A	A	A	A	A	A	A	A	A																	
0404	Gainer Hall Dorm 5	009360	HHW	mBtu	48,267	48,270	1	A																												
0419	Legett Residence Hall	002218	CHW	mBtu	NA	261,537	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
0419	Legett Residence Hall	002222	HHW	mBtu	NA	46,340	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
426-0427-042	FHK Complex	000331	ELE	kWh	106,697	*	1																							A						
0440	Commons Hall	009237	CHW	mBtu	NA	***	31																													
0440	Commons Hall	009238	HHW	mBtu	NA	***	31																													
0443	Oceanography & Meteorology Building	006388	CHW	mBtu	NA	1,386,999	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
0443	Oceanography & Meteorology Building	006392	HHW	mBtu	NA	218,592	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
0468	Evans Library	000318	ELE	kWh	132,859	138,476	2																												M	M
0468	Evans Library	003903	CHW	mBtu	22,827	350,824	30		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
0468	Evans Library	003911	CHW	mBtu	NA	1,561,129	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
0468	Evans Library	003907	HHW	mBtu	2,400	53,257	30		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
0468	Evans Library	003922	HHW	mBtu	NA	45,625	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
0468	Evans Library	005303	HHW	mBtu	971	21,880	30		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
469	Central Campus Parking Garage	000306	ELE	kWh	47,296	*	3							M																						
476	Francis Hall	008015	ELE	kWh	NA	39,178	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
481	Heaton Hall	005712	ELE	kWh	NA	***	31																													
484	Chemistry Building	007152	ELE	kWh	88,623	*	1																													
499	Engineering Innovation Center	002672	CHW	mBtu	NA	380,083	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
499	Engineering Innovation Center	002683	HHW	mBtu	NA	121,298	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
507	Veterinary Medical Science Building	003640	CHW	mBtu	1,337,977	1,749,787	8	M	M	M	M	M	M	M	M																					
507	Veterinary Medical Science Building	003644	HHW	mBtu	270,476	335,748	8	M	M	M	M	M	M	M	M																					
549	Haas Residence Hall	001398	ELE	kWh	NA	42,468	31	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI
740	McNew Laboratory	005874	ELE	kWh	52,407	*	1																													
1026	Veterinary Medicine Administration	006053	HHW	mBtu	NA	316,997	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1041	Texas Vet Med Diagnostic Lab	001466	ELE	kWh	NA	101,594	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1041	Texas Vet Med Diagnostic Lab	001539	ELE	kWh	NA	83,592	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1041	Texas Vet Med Diagnostic Lab	003817	CHW	mBtu	NA	1,211,137	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1041	Texas Vet Med Diagnostic Lab	004137	CHW	mBtu	NA	2,010,424	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1041	Texas Vet Med Diagnostic Lab	003821	HHW	mBtu	NA	66,629	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1041	Texas Vet Med Diagnostic Lab	004130	HHW	mBtu	NA	167,015	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1156	Physical Plant Administration & Shops	007483	ELE	kWh	160,493	*	1																													
1454	University Apartments - The Gardens F	006980	ELE	kWh	NA	20,942	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1455	University Apartments - The Gardens G	006882	ELE	kWh	NA	22,063	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1525	Nuclear Magnetic Resonance Facility	006718	ELE	kWh	89,282	*	1		M																											
1530	Interdisciplinary Life Sciences Building	006286	ELE	kWh	429,504	*	1															M														
1810	Office of the State Chemist Building	009073	ELE	kWh	NA	62,521	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1812-1813	Veterinary Medicine Building 1 and 2	009404	ELE	kWh	NA	NA	31																													
1814	Veterinary Medicine Building 3	009405	ELE	kWh	NA	NA	31																													
812-1813-181	Veterinary Medicine Building 1, 2, and 3	009406	CHW	mBtu	NA	NA	31																													
812-1813-181	Veterinary Medicine Building 1, 2, and 3	009410	HHW	mBtu	NA	NA	31																													

* Monthly consumption evaluated from the cumulative data is not affected by the missing data.
** See Table II-2 for the estimated consumption.
*** Consumption is not estiamted because reliable consumtpion model is not available.
NA: Not available

II-2 Meters with Estimated Consumption for Problematic Data

During the month of August 2016, 35 meters in 18 buildings have estimated daily consumption because the recorded consumption is found to be problematic or questionable. For each of these meters, alternative consumption has been estimated using the best possible method. Table II-2 lists these meters with indications of the days with estimated data. Detailed descriptions for individual cases follow.

Table II-2 Meters with problematic data during August 2016

Building No.	Building Name /MeterID(s)	Type	Unit	Original Monthly Consumption	Estimated Monthly Consumption	# of days	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0291	Rudder Residence Hall																																				
	002132	CHW	mBtu	1,023,141	885,890	19													M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	002136	HHW	mBtu	369,296	251,503	19													M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
0367	Kyle Field																																				
	008852	CHW	mBtu	3,922,511	4,382,190	5	M	M	M	M	M																										
0376	Chemistry Building Addition																																				
	007119	HHW	mBtu	594,194	723,660	14											M	M	M	M	M							M	M	M	M	M	M	M	M	M		
0387	Richardson Petroleum Engineering Building																																				
	005809	HHW	mBtu	43,974	131,173	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1402	Buzbee Leadership Learning Center																																				
	007725	CHW	mBtu	427,434	245,280	29		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	007726	HHW	mBtu	6,612	7,967	12	M	M	M	M	M	M	M	M	M	M	M	M																			
0441	Krueger Residence Hall																																				
	002504	CHW	kWh	-108,882,149	1,166,892	26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M						
	002500	HHW	kWh	-55,231,093	602,893	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
0446	Rudder Tower																																				
	002459	HHW	mBtu	23,658	17,702	3	M	M	M																												
0448	Adams Band Hall																																				
	002555	CHW	mBtu	426,999	524,687	15		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M														
	002566	HHW	mBtu	139,714	260,252	15		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M														
0450	Duncan Dining Hall																																				
	002998	CHW	mBtu	1,178,942	1,224,850	10		M	M	M	M	M	M	M						M				M	M												
	003009	HHW	mBtu	45,557	118,199	24		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M						M	M	M	M	M	M	M	M	M
0462	Academic Building																																				
	005905	CHW	mBtu	3,446,145	762,155	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	005909	HHW	mBtu	341,699	334,958	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
482	Fermier Hall																																				
	005881	HHW	mBtu	28,795	58,596	22										M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
483	Thompson Hall																																				
	003887	CHW	mBtu	0	364,836	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
492	Civil Engineering Building																																				
	005954	HHW	mBtu	171,821	121,298	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
511	Heep Laboratory Building																																				
	005821	CHW	mBtu	740,754	644,500	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
512	All Faiths Chapel																																				
	004288	CHW	mBtu	108,753	117,199	18														M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	004293	HHW	mBtu	1	27,455	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
516	Computing Services Center																																				
	005259	ELE	kWh	269,379	522,613	15		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M															
652	Neeley Residence Hall																																				
	002147	CHW	mBtu	1,654,101	690,709	26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M						
	002151	HHW	mBtu	1,110,528	195,581	26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M						
740	McNew Laboratory																																				
	005968	HHW	mBtu	0	84,196	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
880	Small Animal Building																																				
	005958	CHW	mBtu	11,899	39,114	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1511	West Campus Library Facility																																				
	005931	ELE	kWh	148,733	105,456	16																M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1519	TX School of Rural Public Health B																																				
	005274	ELE	kWh	102,331	52,035	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1520	TX School of Rural Public Health C																																				
	005275	ELE	kWh	52,035	102,331	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1554	Reed Arena																																				
	006243	ELE	kWh	222	858	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1558	Cox-McFerrin Center for Aggie Basketball																																				
	007575	CHW	mBtu	737,743	629,688	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1560	Student Recreation Center																																				
	002937	HHW	mBtu	1,065,255	888,440	31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1900	Texas Institute for Genomic Medicine																																				
	005546	HHW	mBtu	358,381	289,346	6	M	M	M																			M	M	M							
1910	National Center for Therapeutics Manufacturing																																				
	007519	CHW	mBtu	2,757,673	6,070,050	16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M															

NA: Not available
** See Table II-1 for the original consumption.

Notes: The colored cells means the consumption for the day appears to be problematic. The letter in the colored cell indicates the method for estimation. M: model, F: multiplication factor, L: linear interpolation, A: average, and C: correction of the reset cumulative reading

Rudder Residence Hall (TAMU Bldg #291)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002132	19	8/13/2016 – 8/31/2016	Model
HHW	002136	19	8/13/2016 – 8/31/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level has increased suddenly.	8/13/2016 – ongoing
HHW	The consumption level has increased suddenly.	8/13/2016 – ongoing

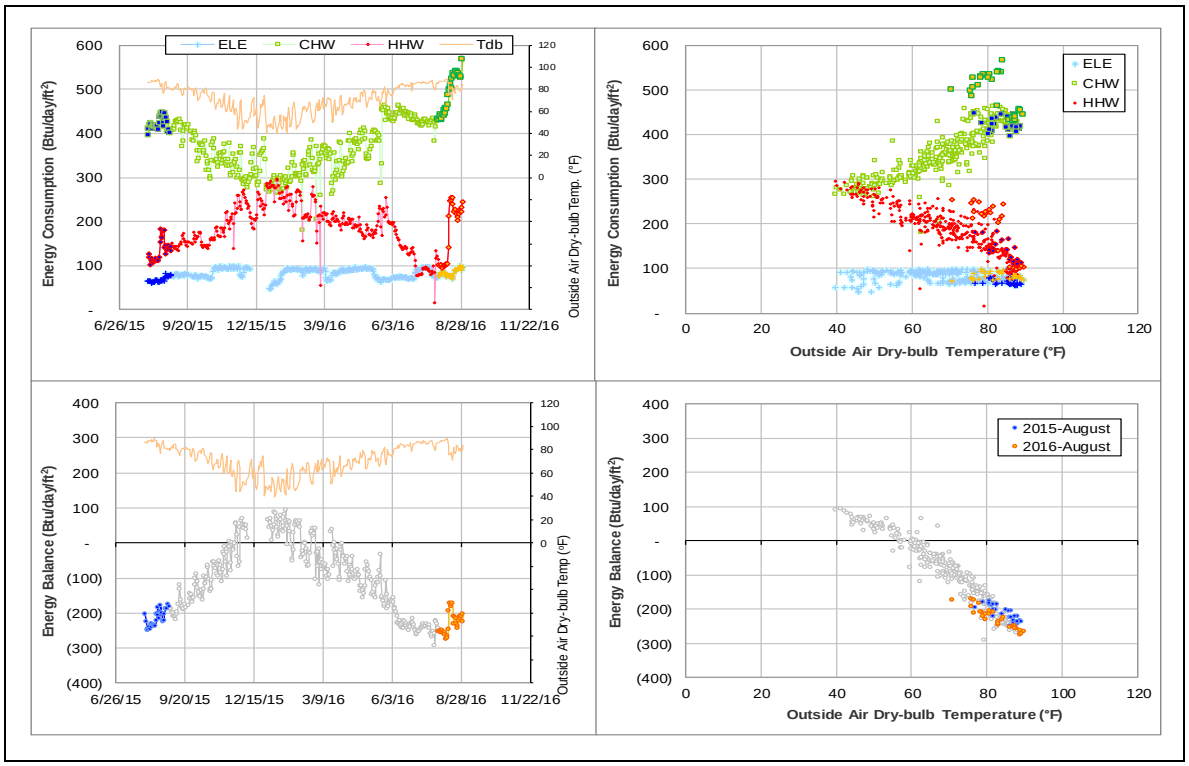
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	002132	8/13/2016 – 8/31/2016	Flow Rate	Increase
HHW	002136	8/13/2016 – 8/31/2016	Flow Rate, Delta T	Increase

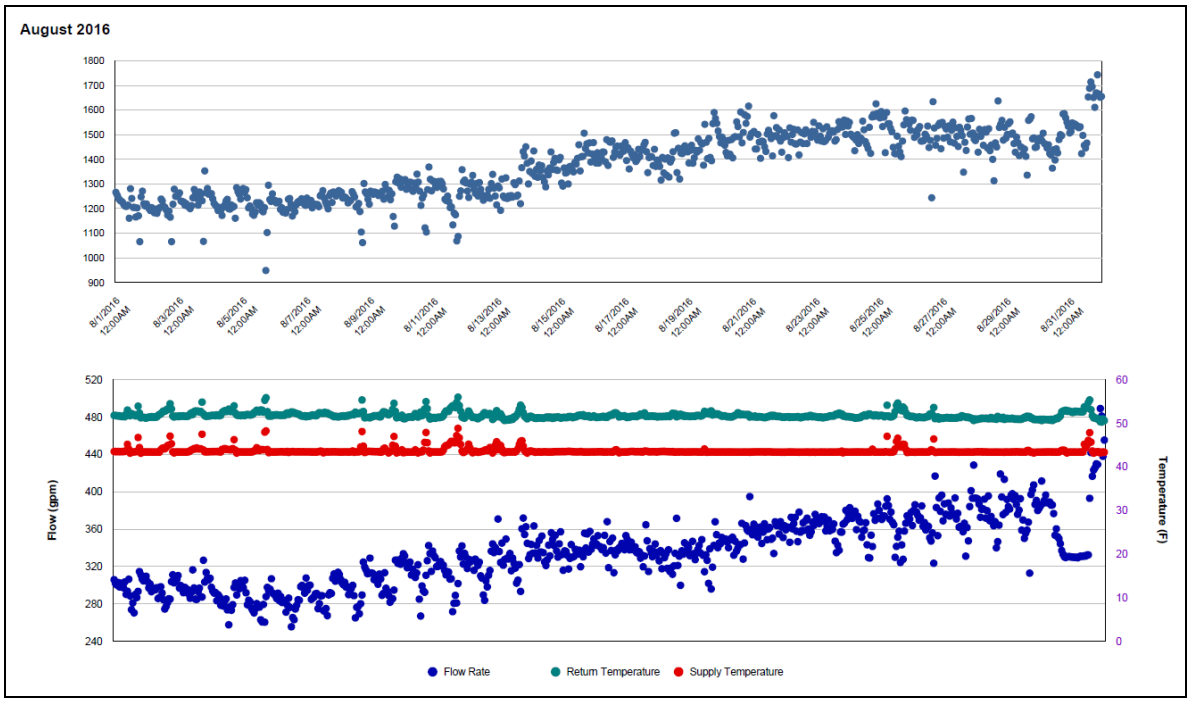
Quantitative descriptions and comments

CHW and HHW both increased suddenly starting 8/13/2016 by 100 Btu/day-sf, due to a gradual increase of flow rate. Temperature difference of HHW also increased suddenly, so HHW had a more rapid increase. Also see II-3 for more information.

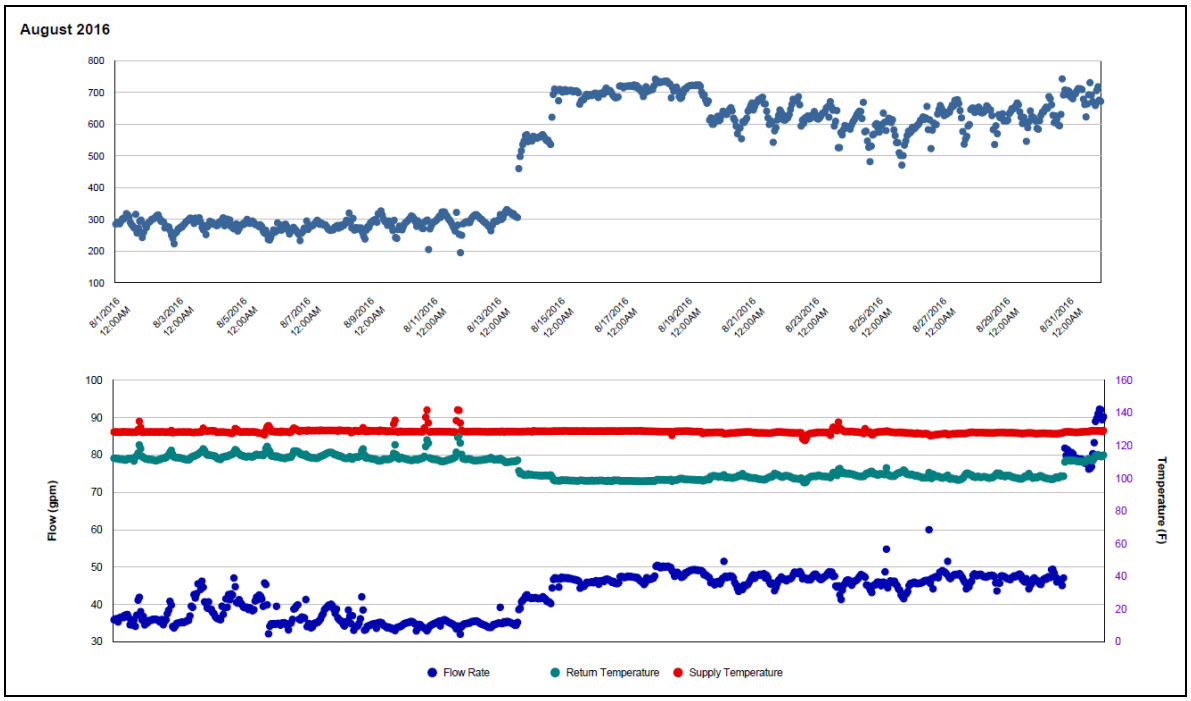
Explanatory Figure: 13 months energy balance plot with original data



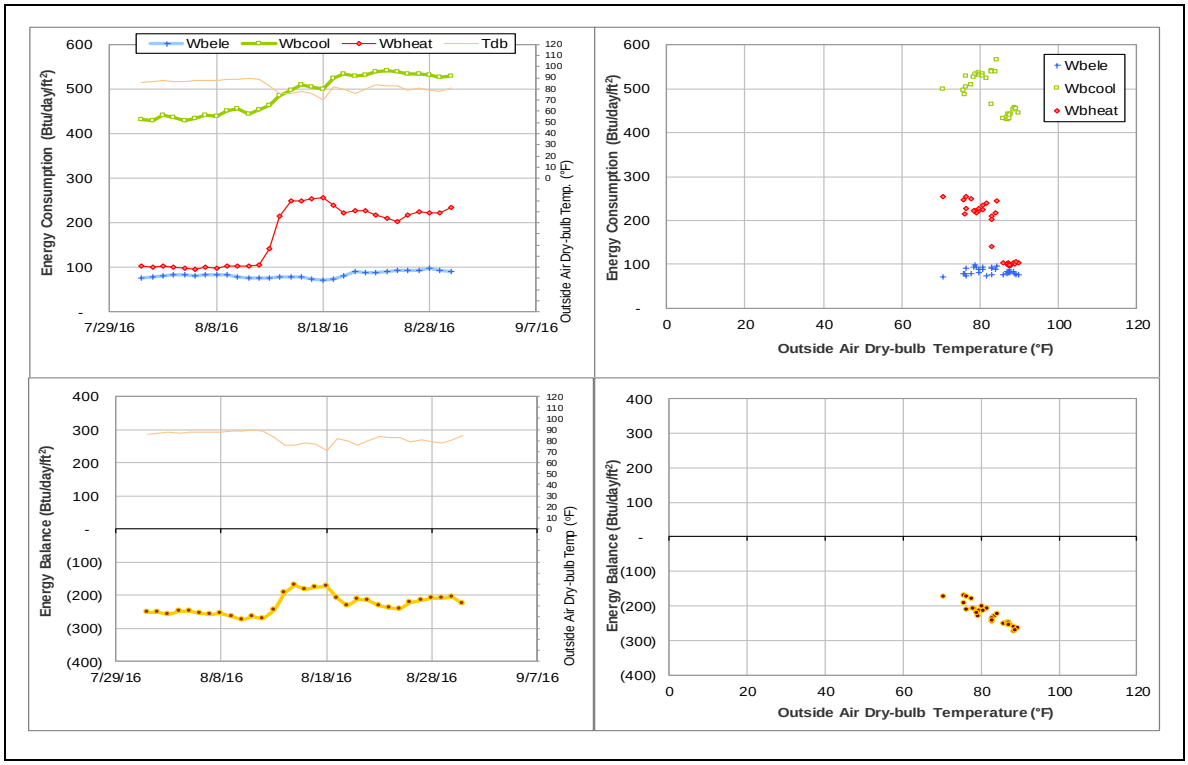
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during August 2016)



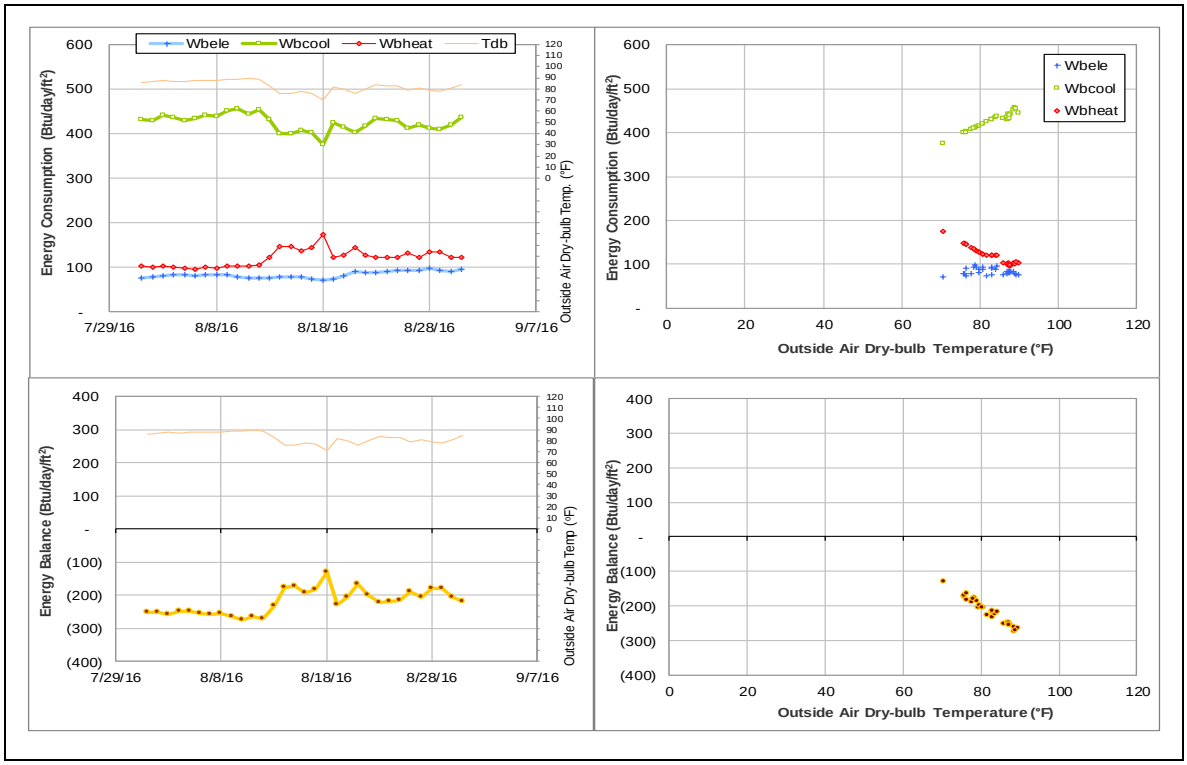
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during August 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Kyle Field (TAMU Bldg #367)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	008852	5	8/1/2016 – 8/5/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption dropped for a short period. Scattering data are observed.	8/1/2016 – 8/5/2016

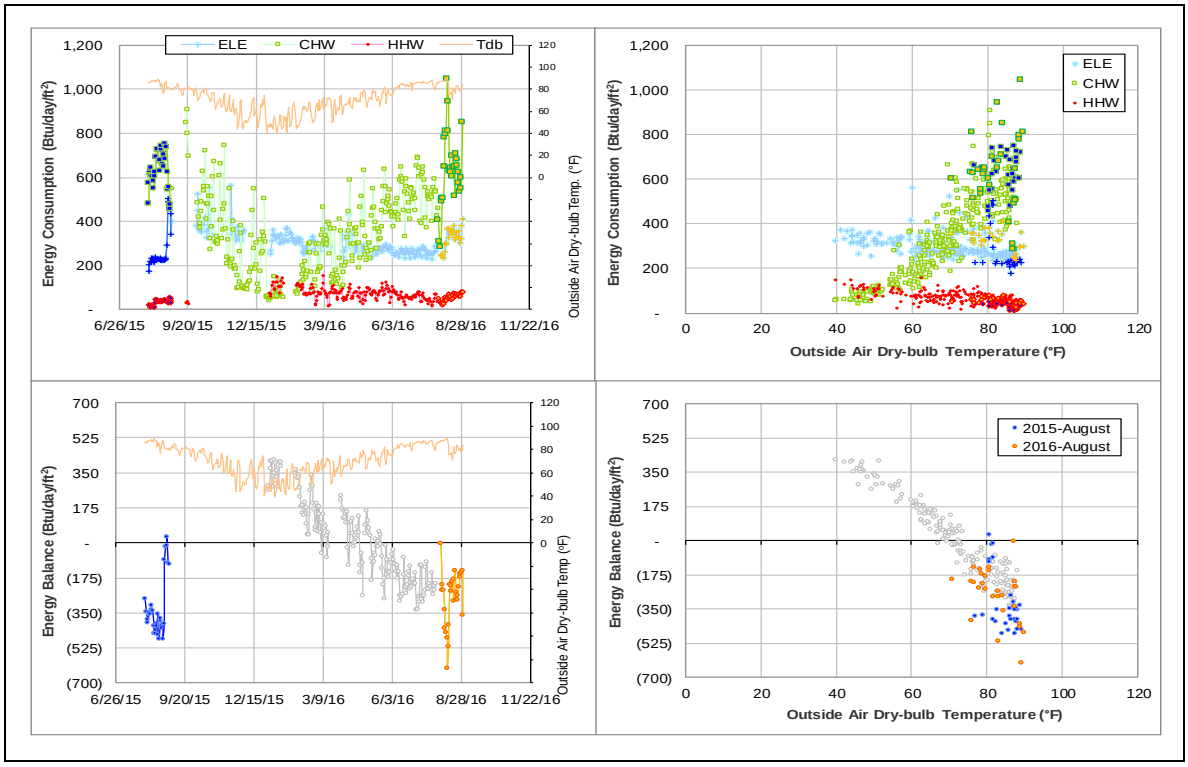
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	008852	8/1/2016 – 8/5/2016	Flow Rate	Zero

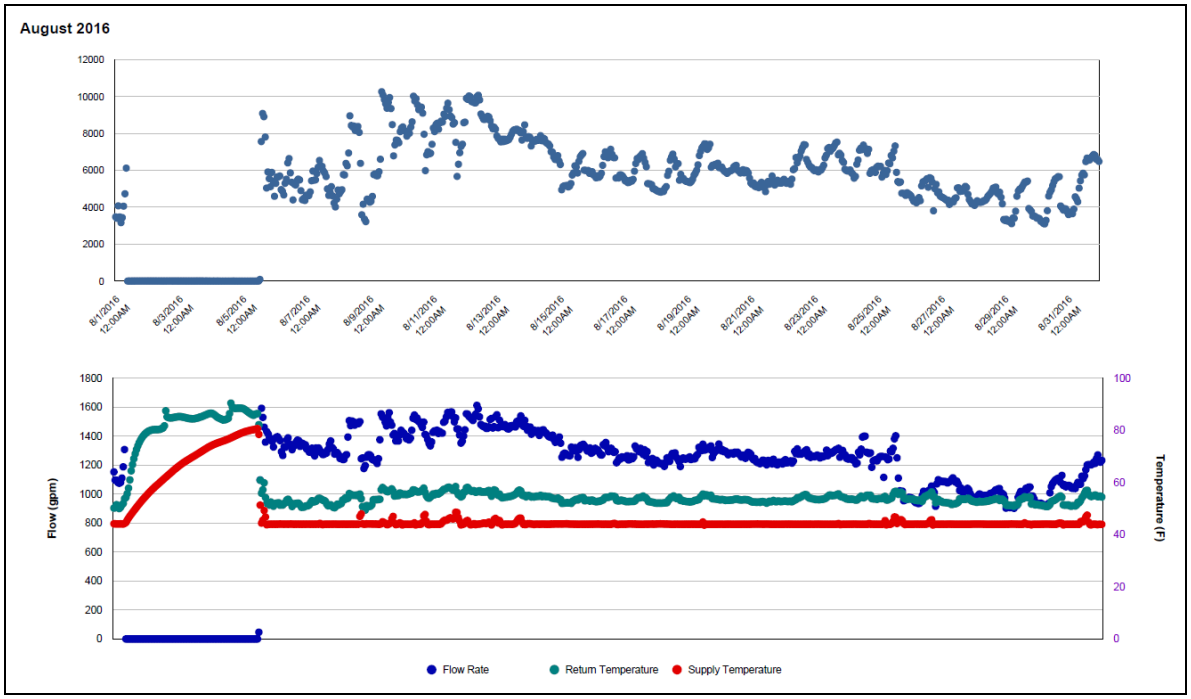
Quantitative descriptions and comments

CHW flow passing MID 008852 appears to be closed during 8/1 – 8/5/2016. The consumption is estimated using a model. This building has high consumptions on dates of 8/12 – 8/14, 8/18, 8/31 due to events which are 200 Btu/day-sf more than usual, and these dates coincide with event high consumption days of 0361 Bright Football Complex. These event day data are kept.

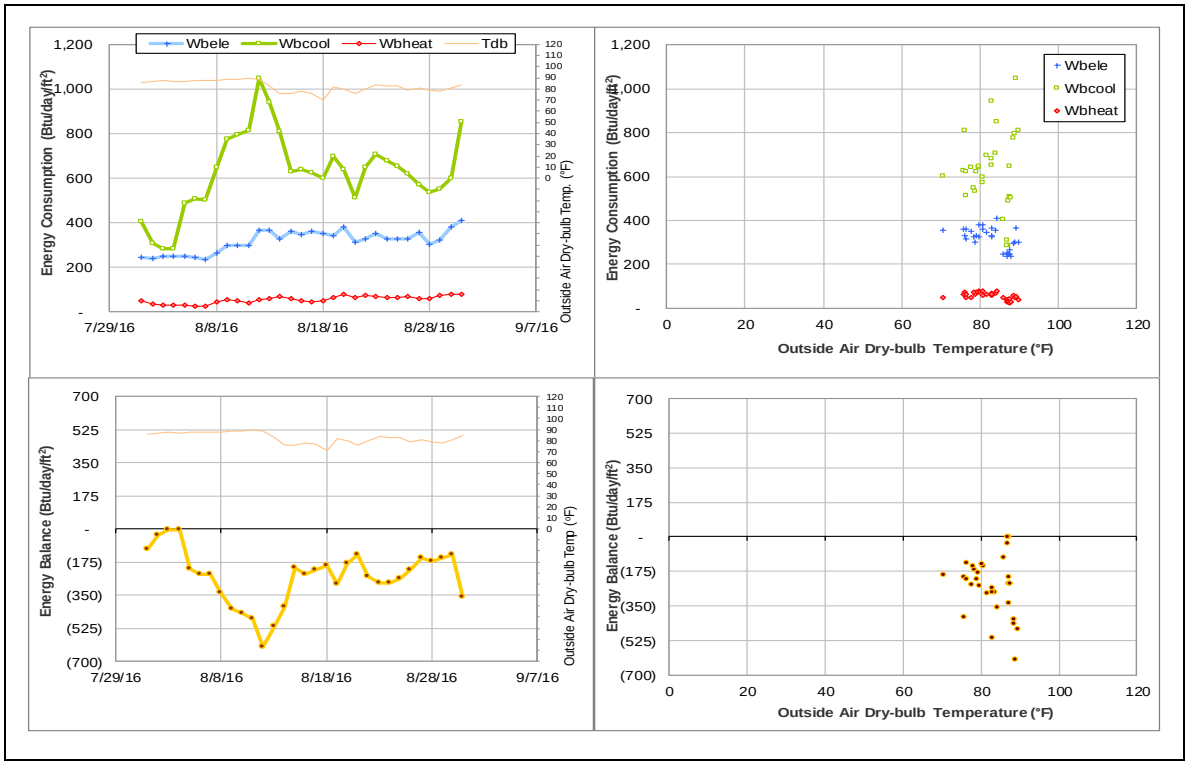
Explanatory Figure: 13 months energy balance plot with original data



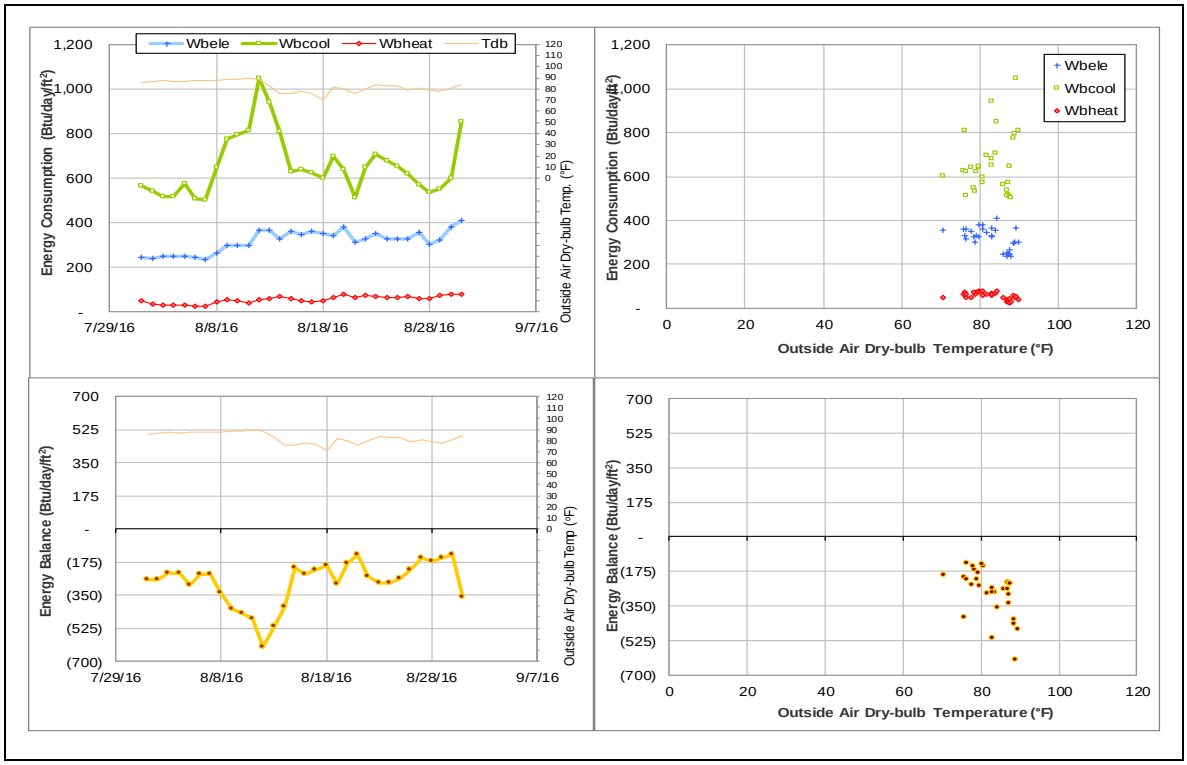
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during August 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Chemistry Building Addition (TAMU Bldg #376)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	007119	14	8/11/2016 – 8/15/2016 8/22/2016 – 8/30/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	The consumption level is increasing gradually.	8/11/2016 – 8/15/2016
	The consumption dropped for a short period.	8/22/2016 – 8/30/2016

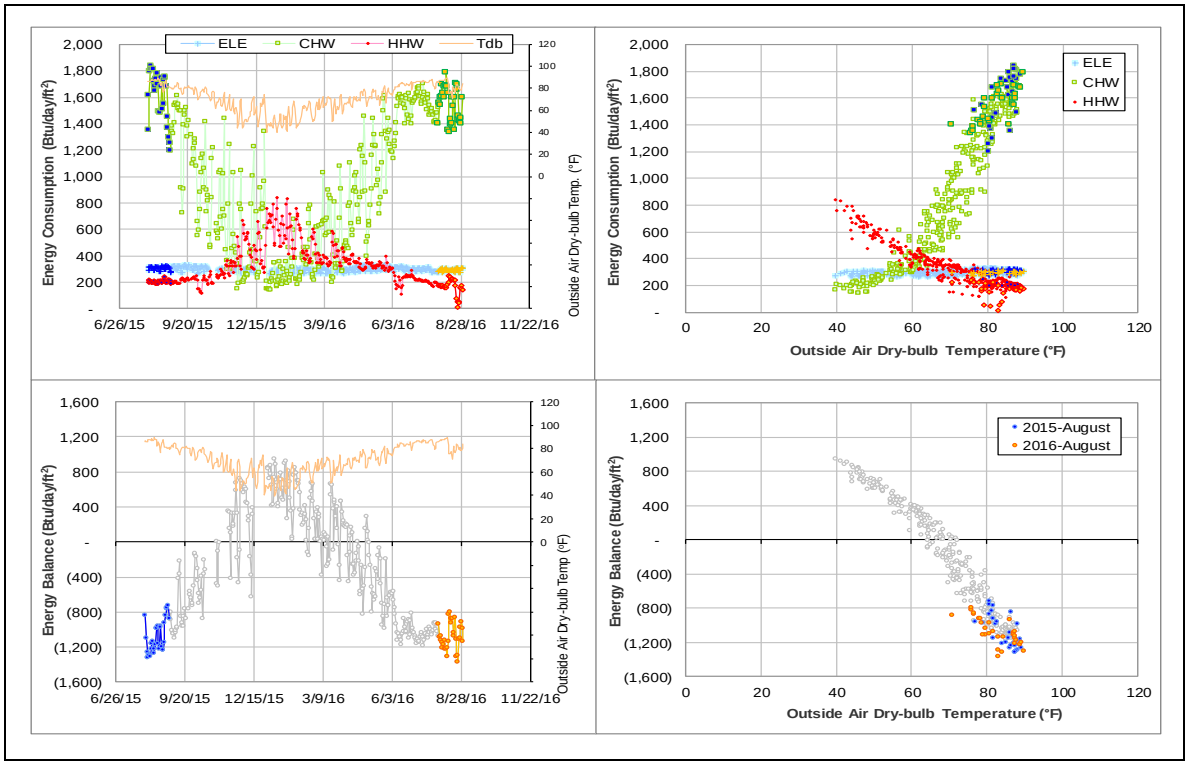
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	007119	8/11/2016 – 8/15/2016	Flow Rate	High
		8/22/2016 – 8/30/2016	Return Temp	Increased
			Delta-T	Negative sometimes

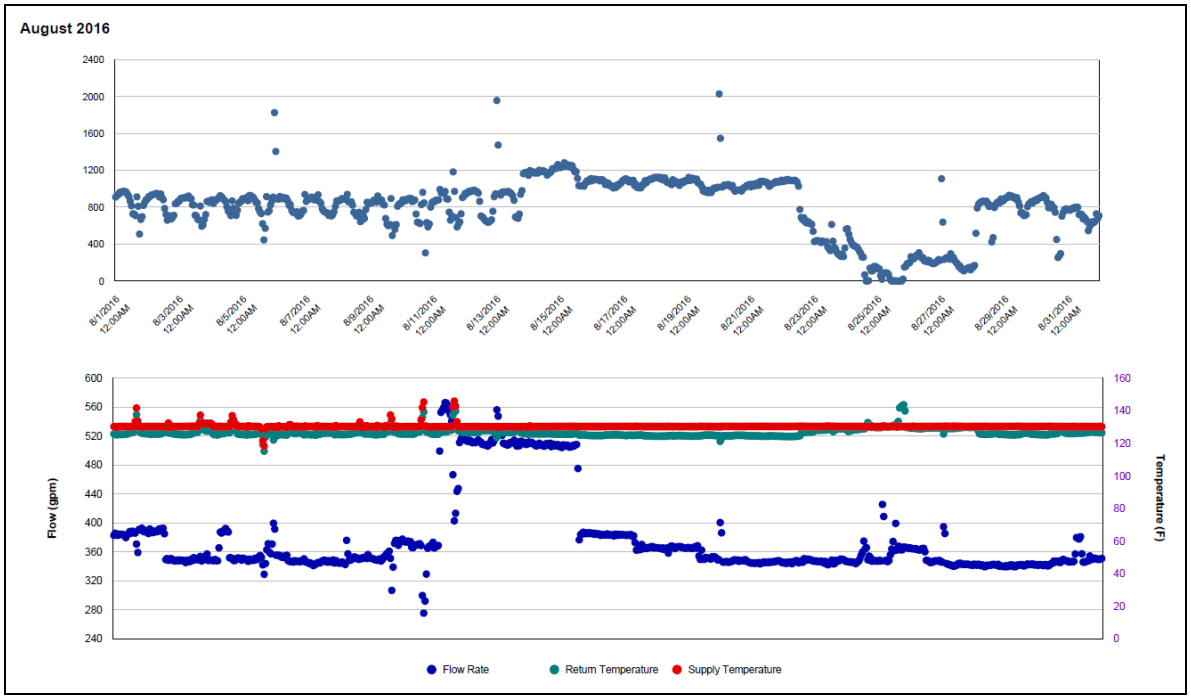
Quantitative descriptions and comments

HHW consumption is 20 Btu/day-sf higher than near days due to high flow rate during 8/11 – 8/15/2016, and decreased to near zero due to increase of return temp during 8/22 – 8/30/2016.

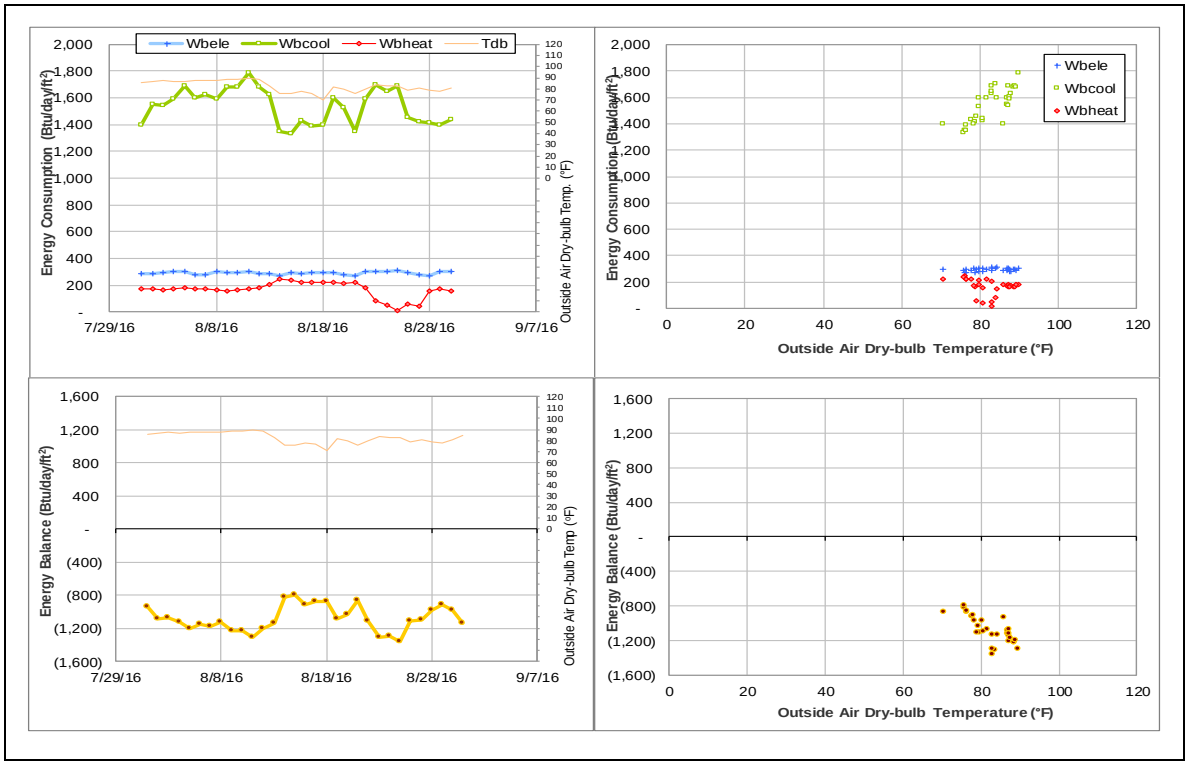
Explanatory Figure: 13 months energy balance plot with original data



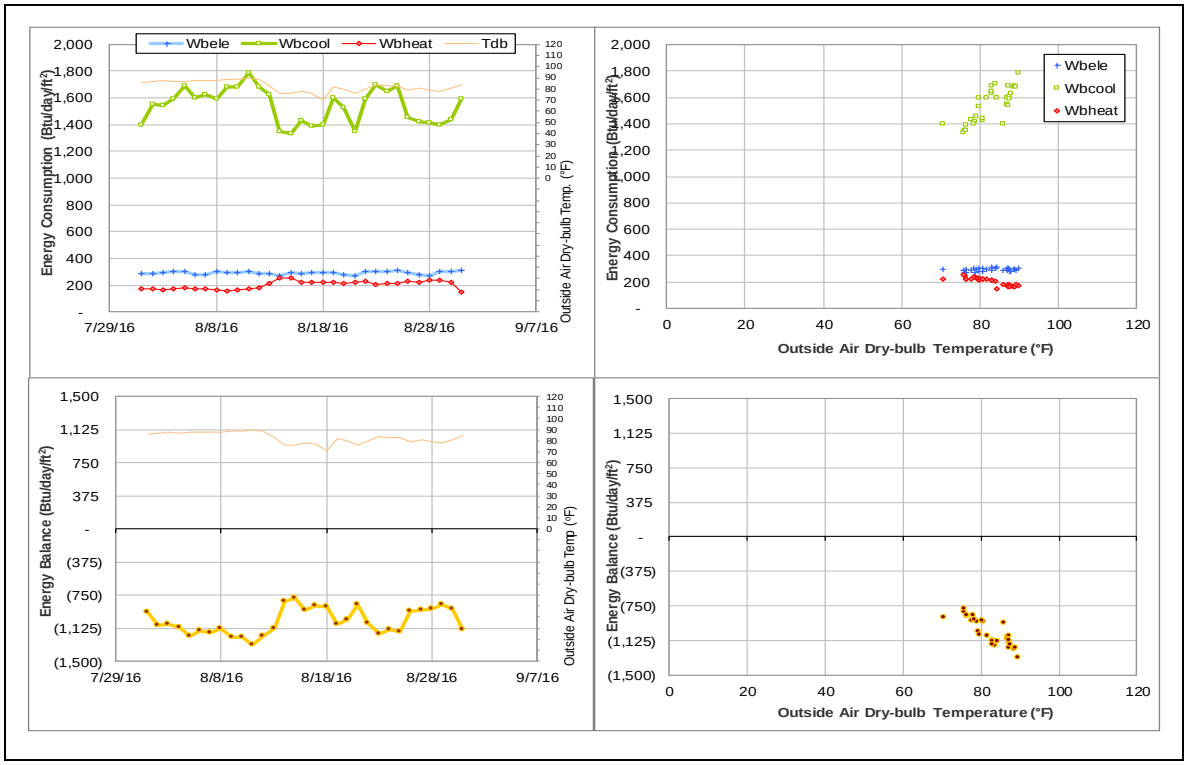
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during August 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Richardson Petroleum Engineering Building (TAMU Bldg #387)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	005809	31	8/1/2016 – 8/31/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	The consumption level has decreased suddenly.	6/21/2016 – ongoing

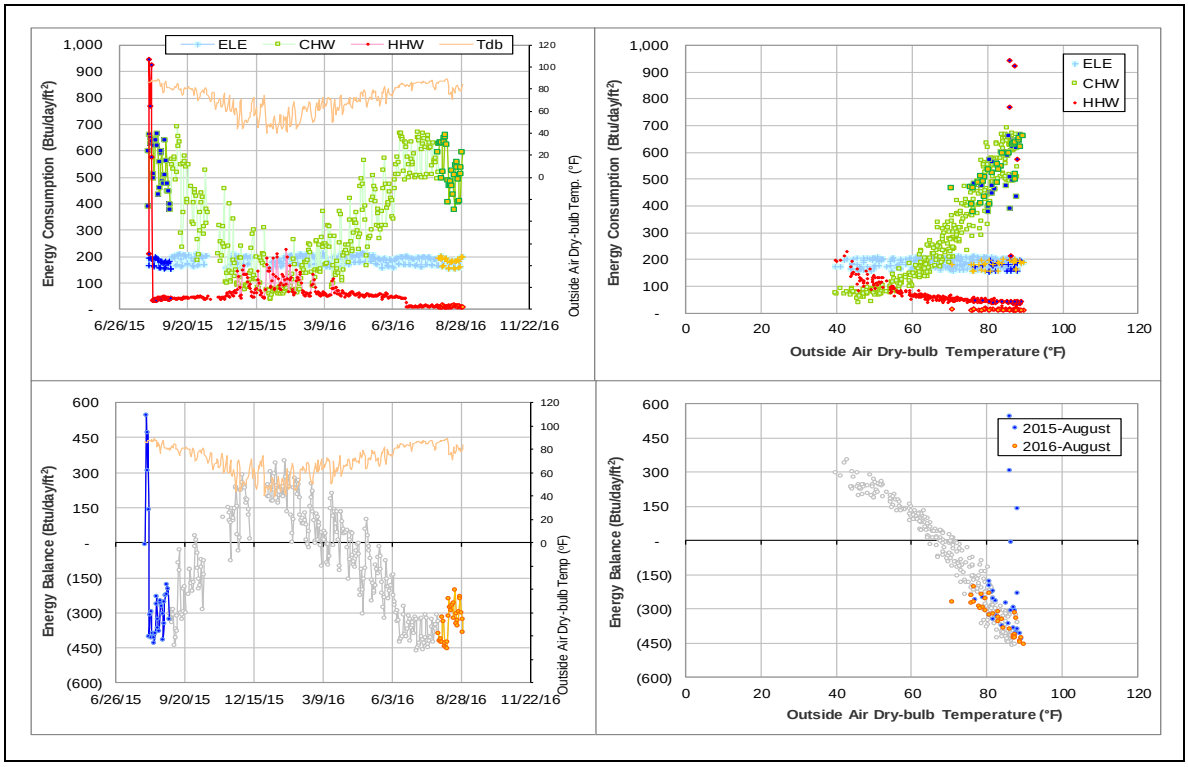
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	005809	6/21/2016 – ongoing	Return Temperature	Increased

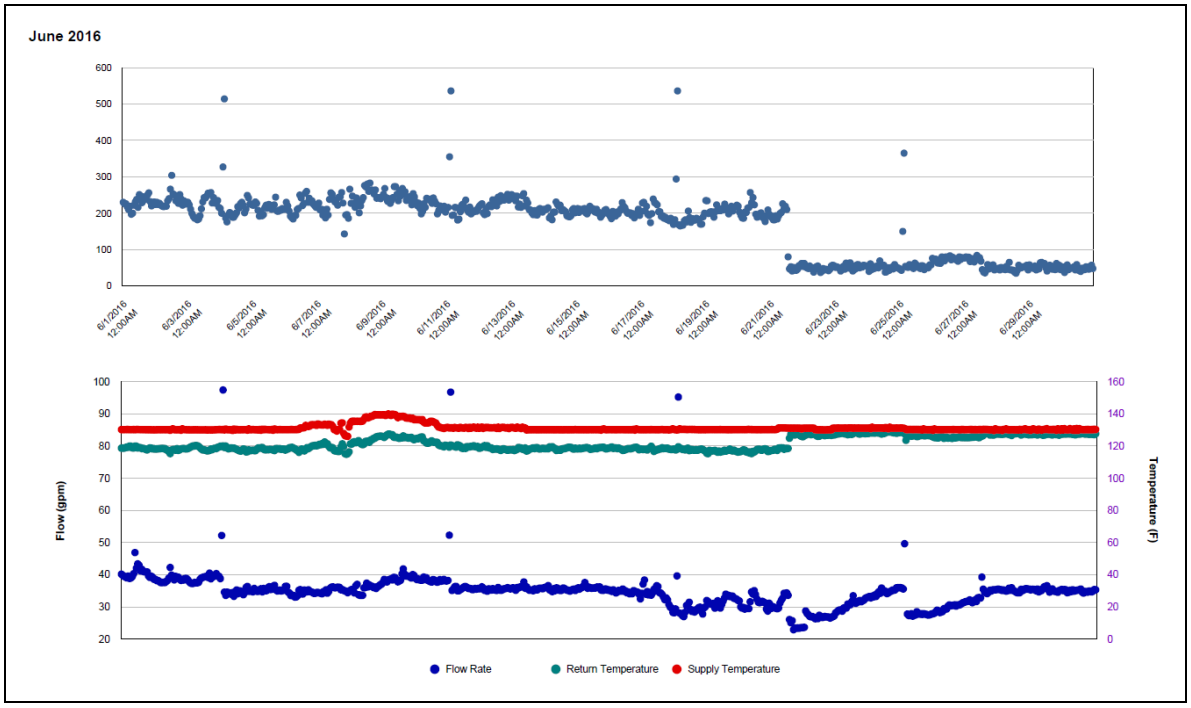
Quantitative descriptions and comments

The HHW consumption suddenly decreased by 30 Btu/day/ft^2 since 6/21/2016, as the HHW return temperature increased and the delta T decreased to be very small. The consumption was estimated by a model.

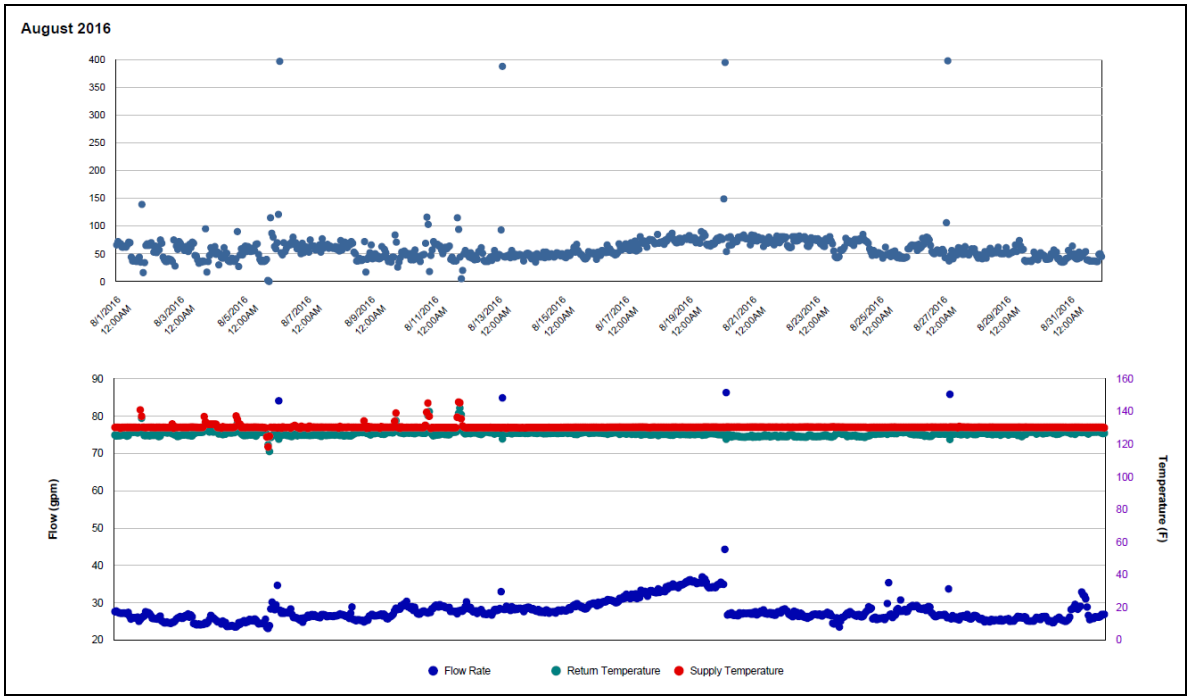
Explanatory Figure: 13 months energy balance plot with original data



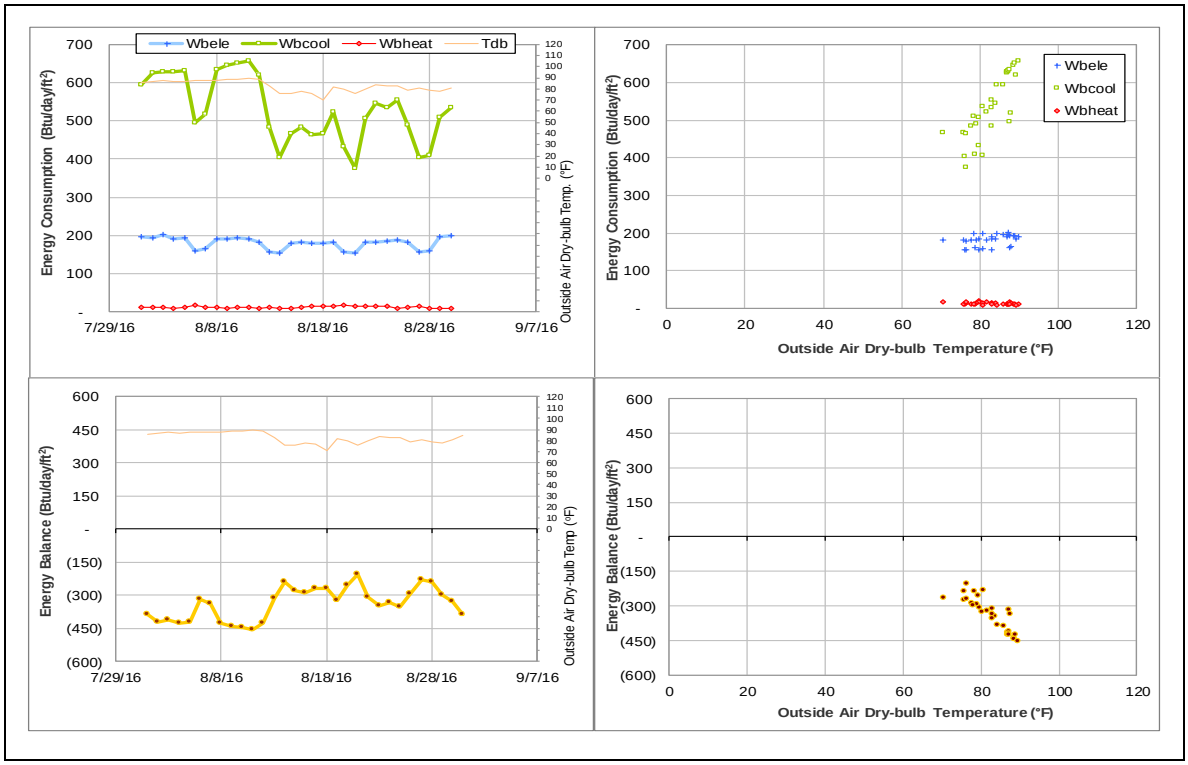
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during June 2016)



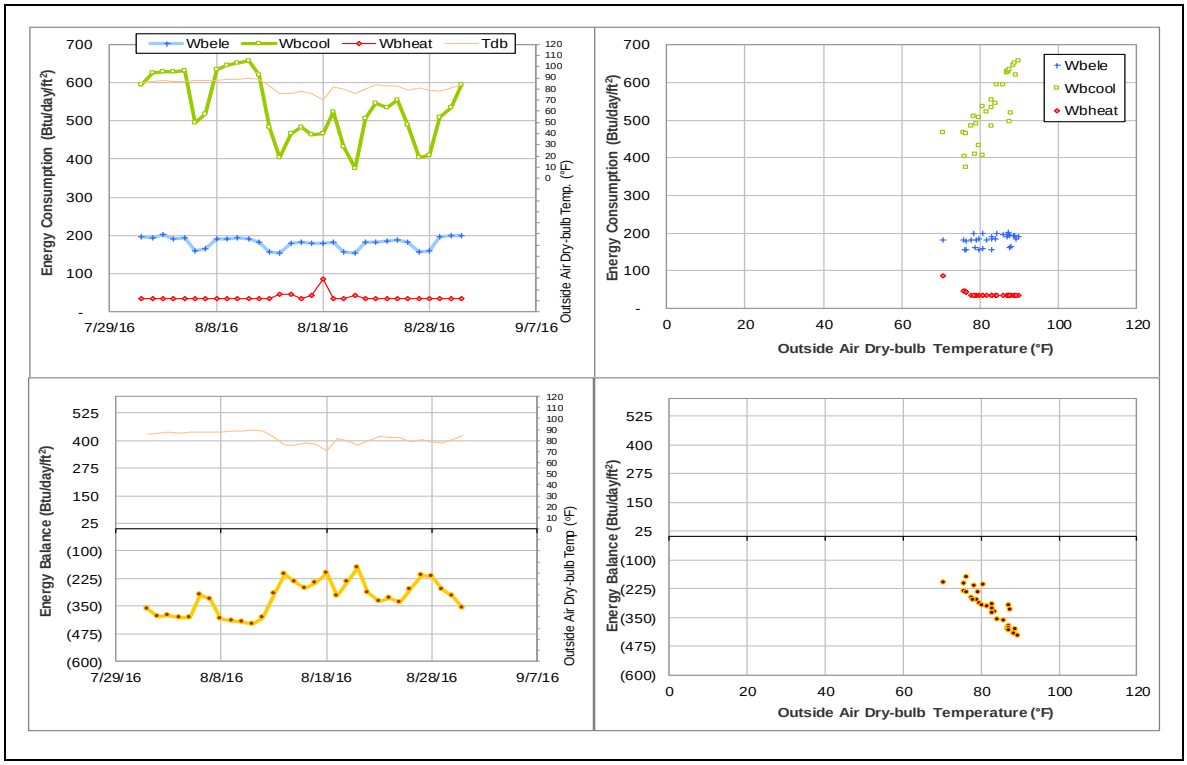
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during August 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Krueger Residence Hall (TAMU Bldg #441)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002504	26	8/1/2016 – 8/26/2016	Model
HHW	002500	31	8/1/2016 – 8/31/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The metered values appear to be faulty.	8/1/2016 – 8/26/2016
HHW	The metered values appear to be faulty.	8/1/2016 – 8/26/2016
	The consumption level is lower than the level during the past year.	8/27/2016 – 8/31/2016

Changes in sensor readings related to the detected issues

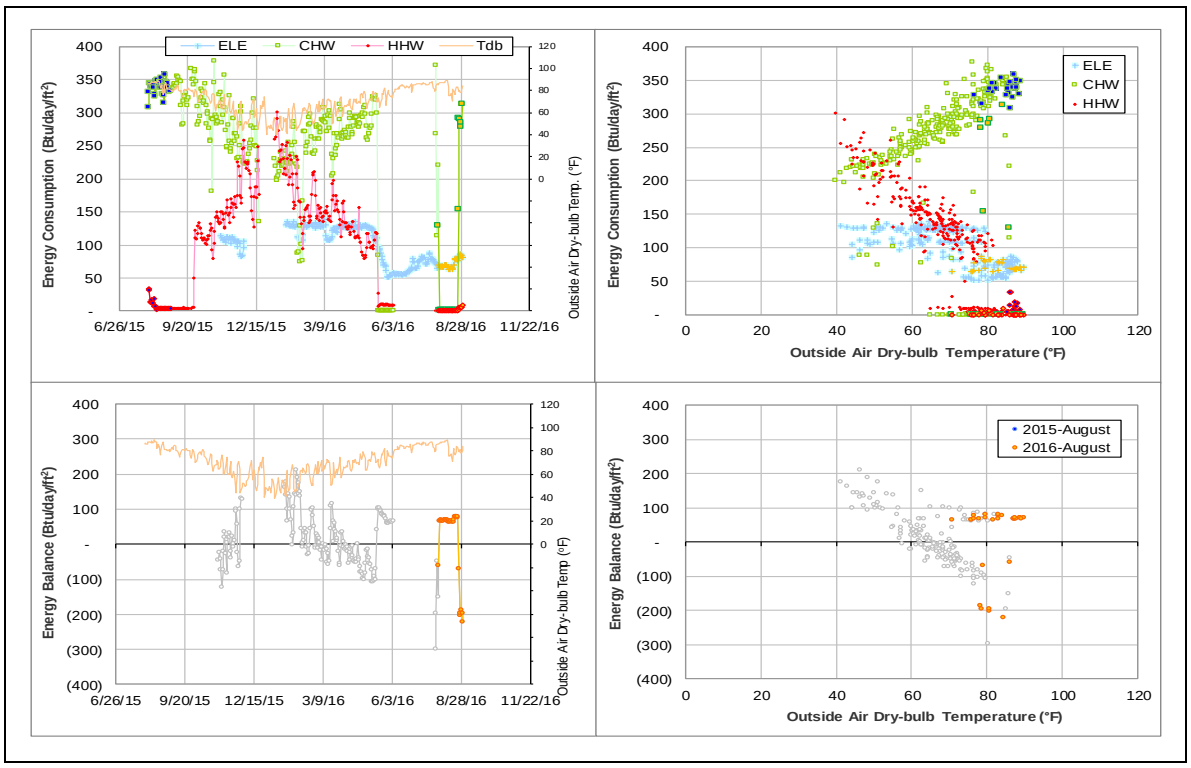
Energy Type	Meter ID	Period	Type	Description
CHW	002504	8/1/2016 – 8/26/2016	Flow rate, Return temperature	Constant
HHW	002500	8/1/2016 – 8/26/2016	Flow rate, Return temperature, Supply temperature	Constant
		8/27/2016 – 8/31/2016	Flow rate	Near zero

Quantitative descriptions and comments

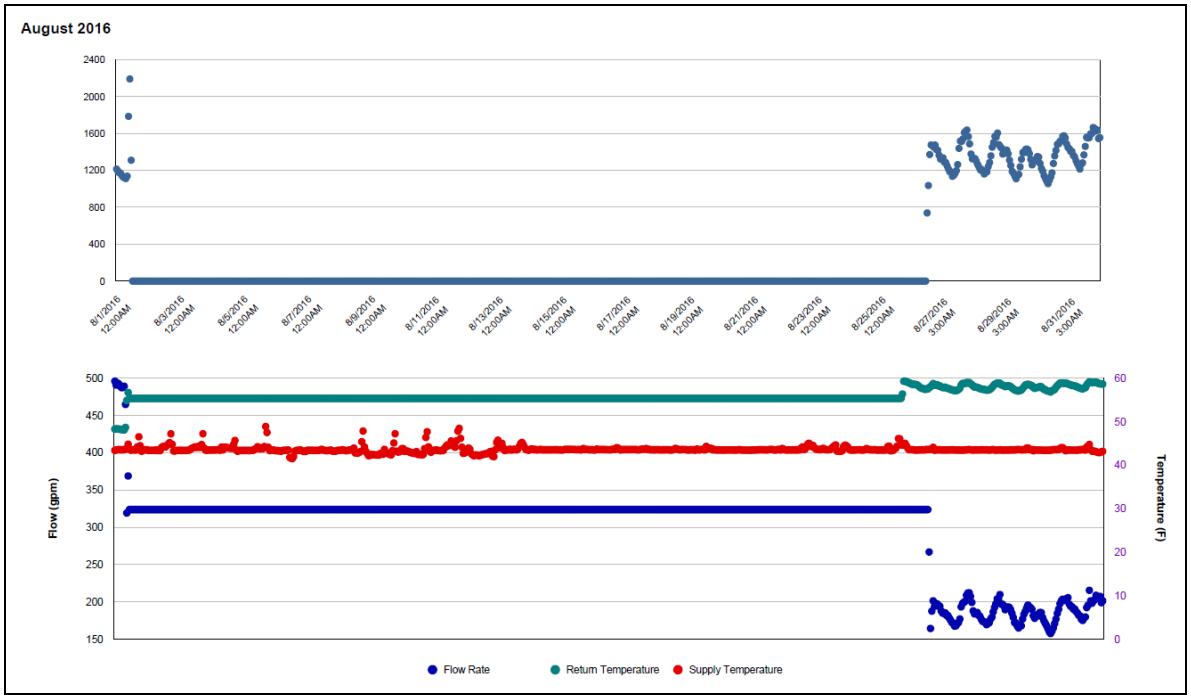
Both the CHW and HHW consumption decreased to nearly zero on 5/16/2016. During 6/6/2016-7/27/2016, the CHW/HHW data was missing. Then on 7/28/2016-7/31/2016, the CHW consumption fluctuated in a large range between 110 and 380 Btu/day/ft^2 due to the changes of the CHW flow rate, and the HHW consumption was zero due to the faulty flow rate. The CHW consumption was estimated by a model and the HHW consumption was estimated by averaging the data during 5/17/2015 – 6/5/2016.

Constant readings are observed in flow rate, return temp for CHW, and in flow rate, return temp, supply temp for HHW during 8/1 – 8/26/2016. After this period, CHW is back to normal level, but HHW is at near zero level. Both meters seem to have been reset on 8/26/2016 according to hourly reading values.

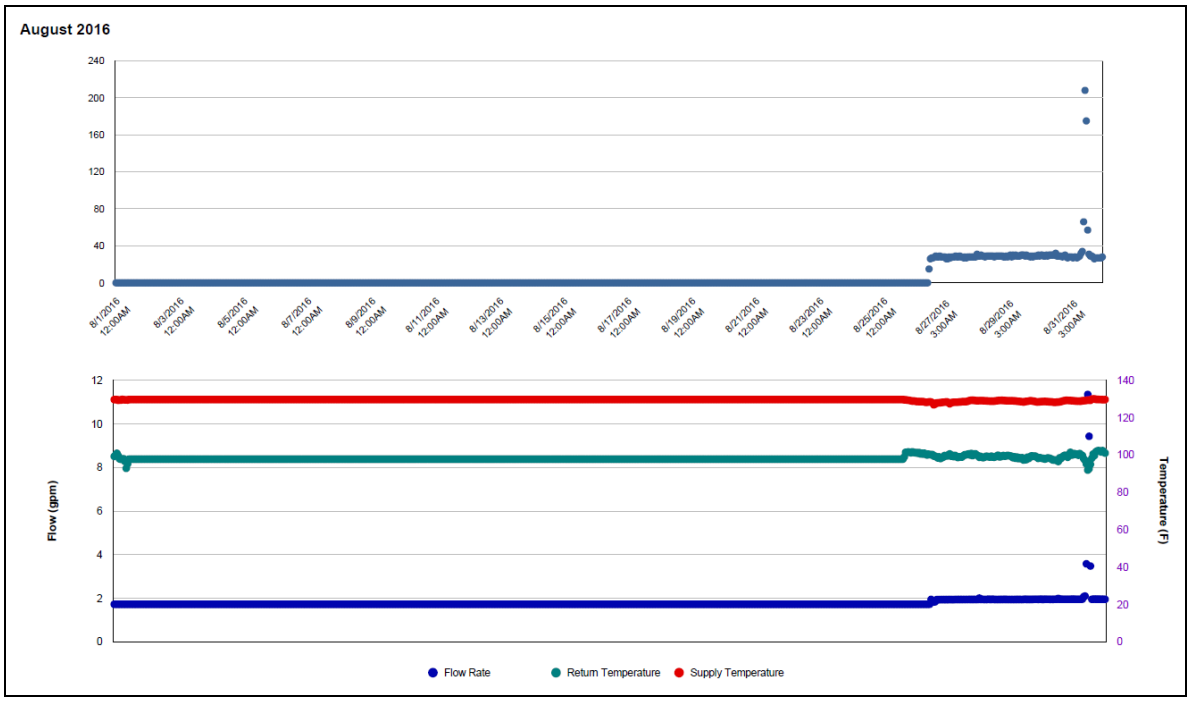
Explanatory Figure: 13 months energy balance plot with original data.



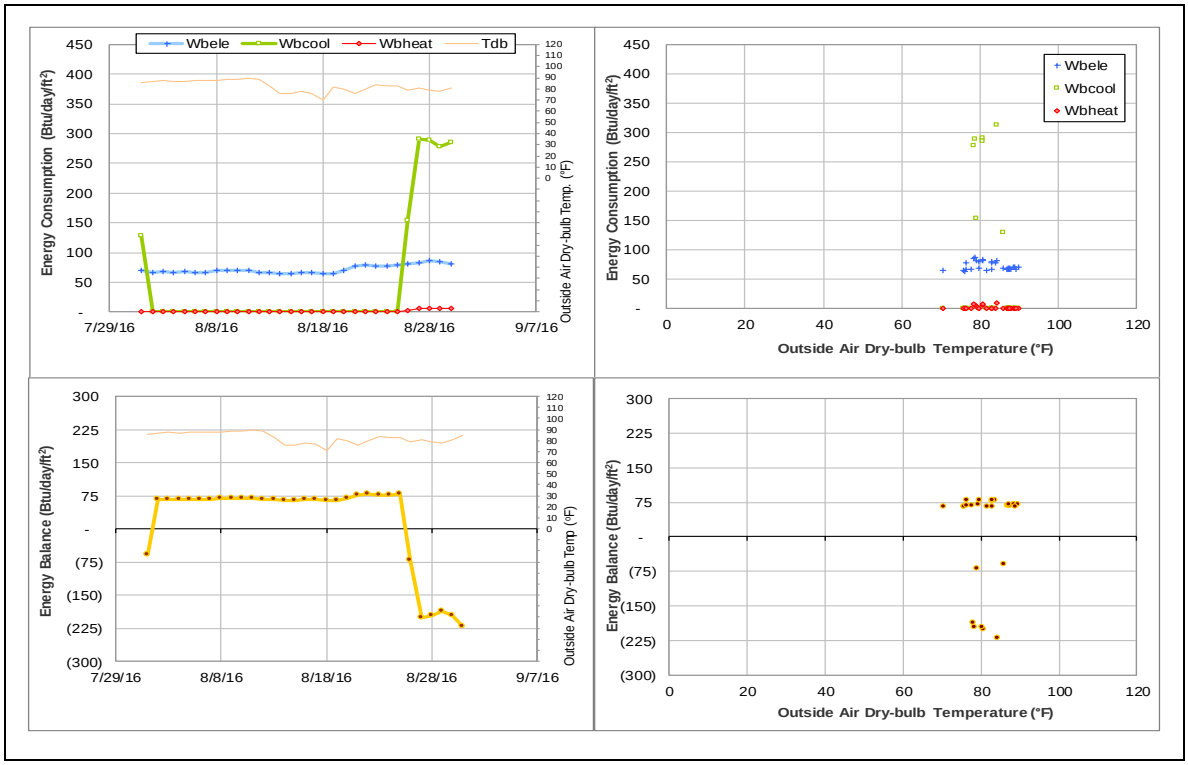
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during August 2016)



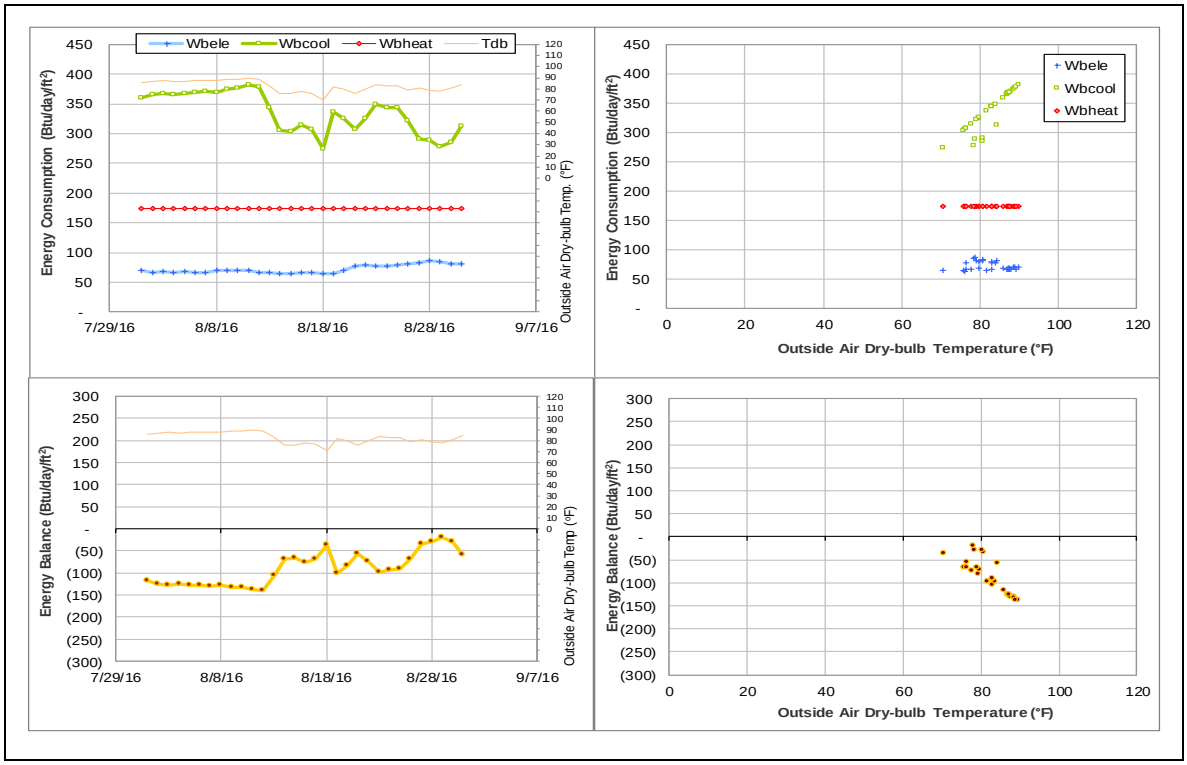
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during August 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Rudder Tower (TAMU Bldg #446)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	002459	3	8/1/2016 – 8/3/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	The consumption dropped for a short period.	7/20/2016 – 7/24/2016
	The consumption increased for a short period.	7/24/2016 – 8/3/2016
	The consumption level has decreased suddenly.	8/4/2016 – ongoing

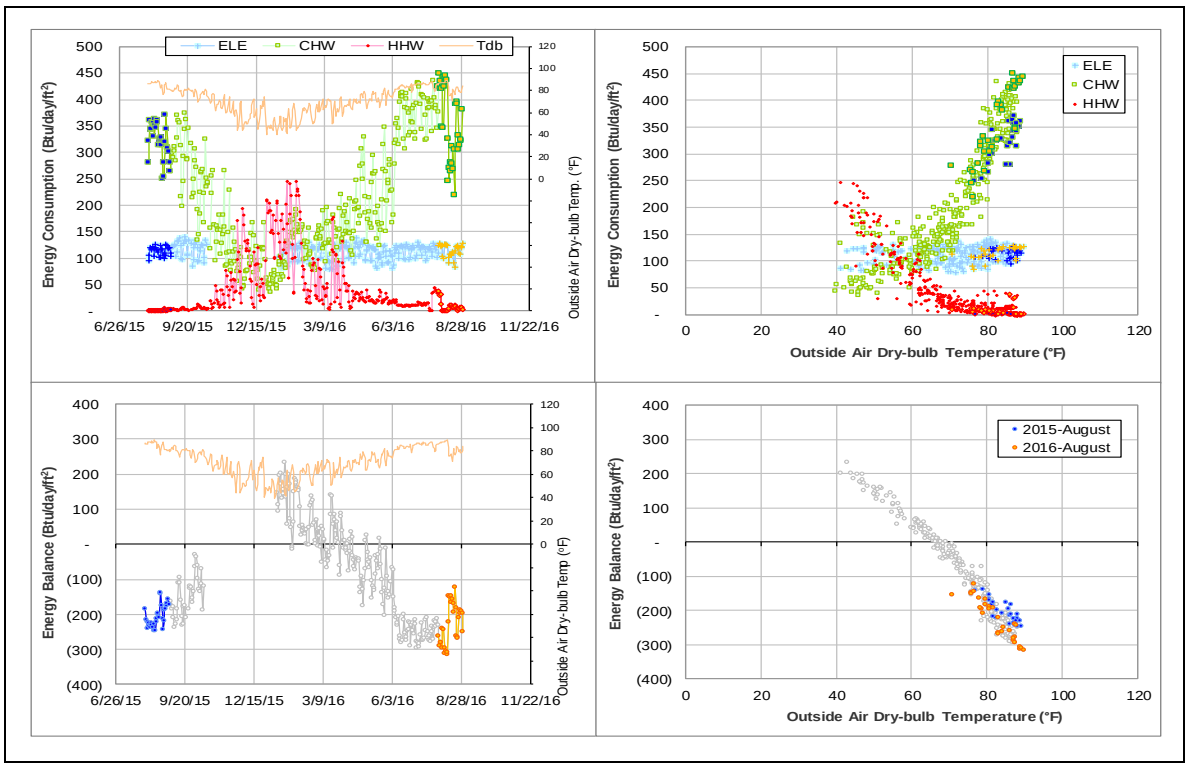
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	002459	7/20/2016 – 7/24/2016	Flow rate	Near zero
		7/24/2016 – 8/4/2016	Flow rate	High
		8/4/2016 – 8/31/2016	Flow rate	Near zero

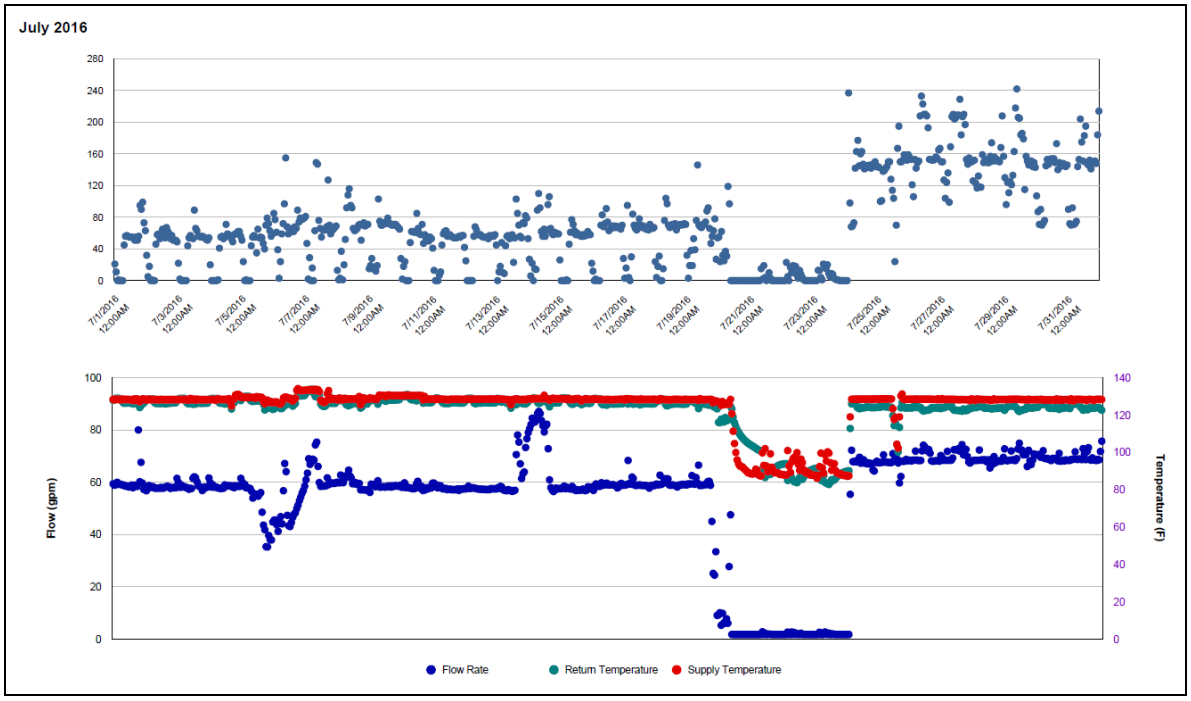
Quantitative descriptions and comments

HHW has been fluctuating since a close off on 7/20/2016. There was a period of zero flow on 7/20 – 7/24, after which the *consumption is 40 Btu/day-sf higher*. Starting 8/4/2016 the flow rate decreased to near zero again. On both zero-flow periods, the temperatures responded accordingly and gradually reached room temperature. Occasional temperature difference started to show up again starting 8/14/2016. The near zero flows are more likely due to operation instead of meter faulty. Therefore only the high flow part is estimated by a model.

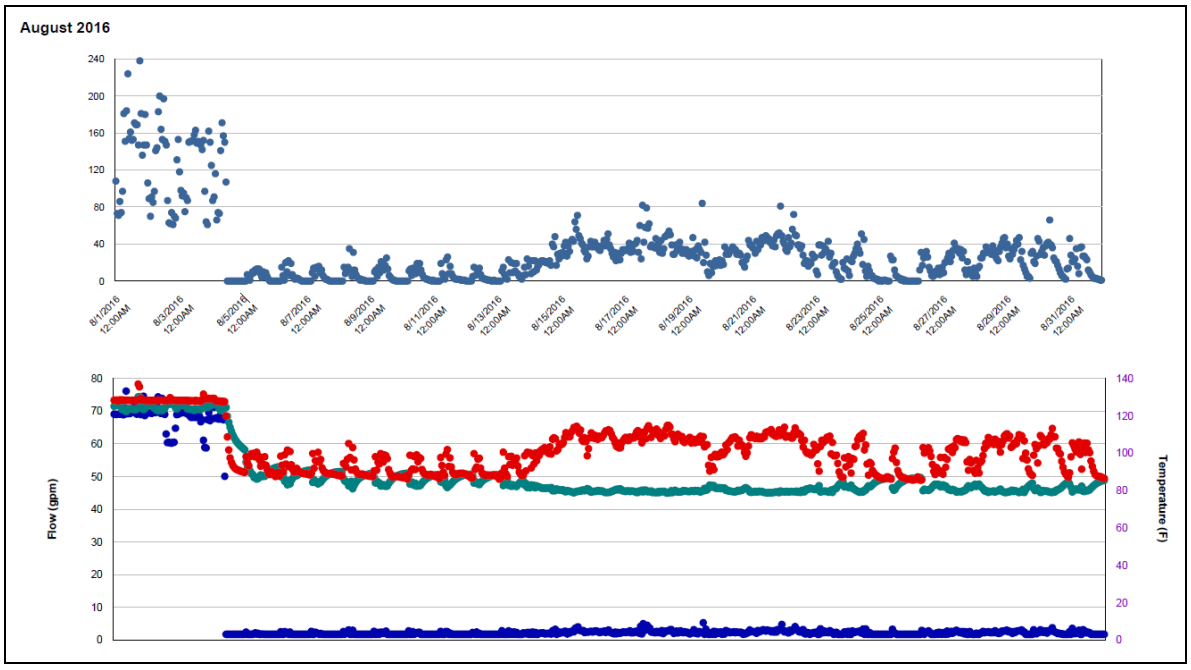
Explanatory Figure: 13 months energy balance plot with original data



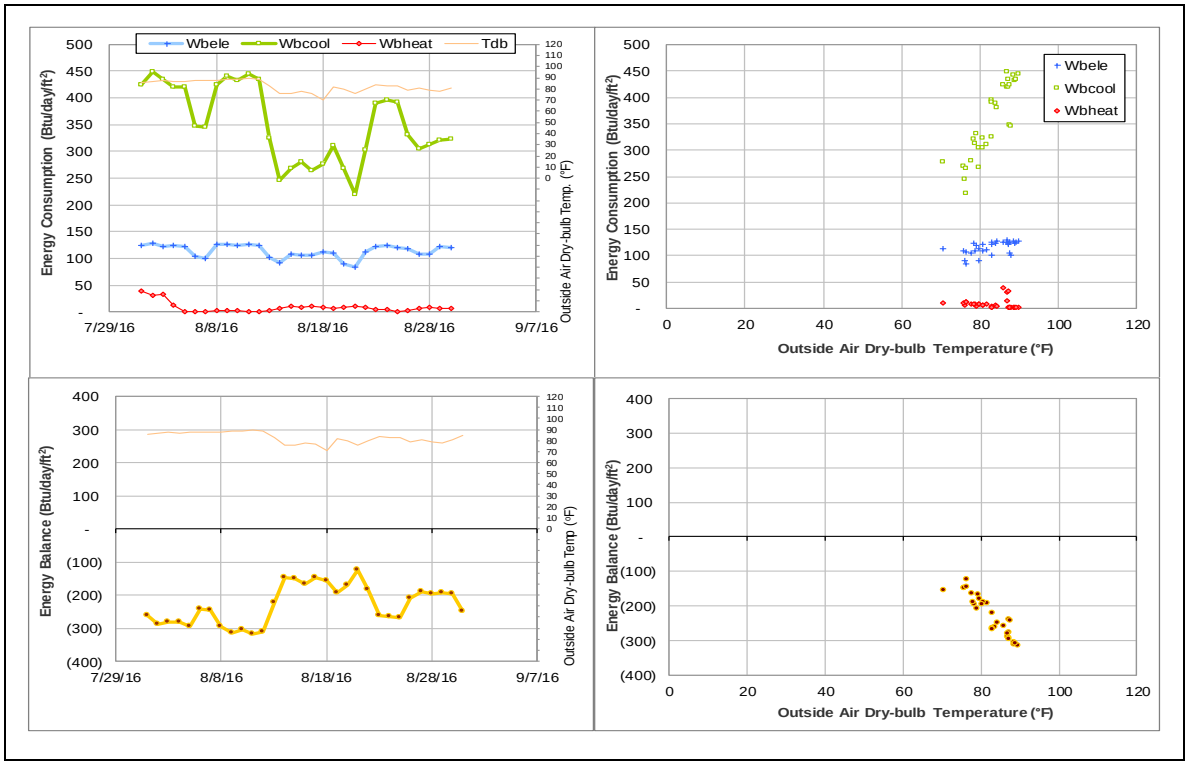
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during July 2016)



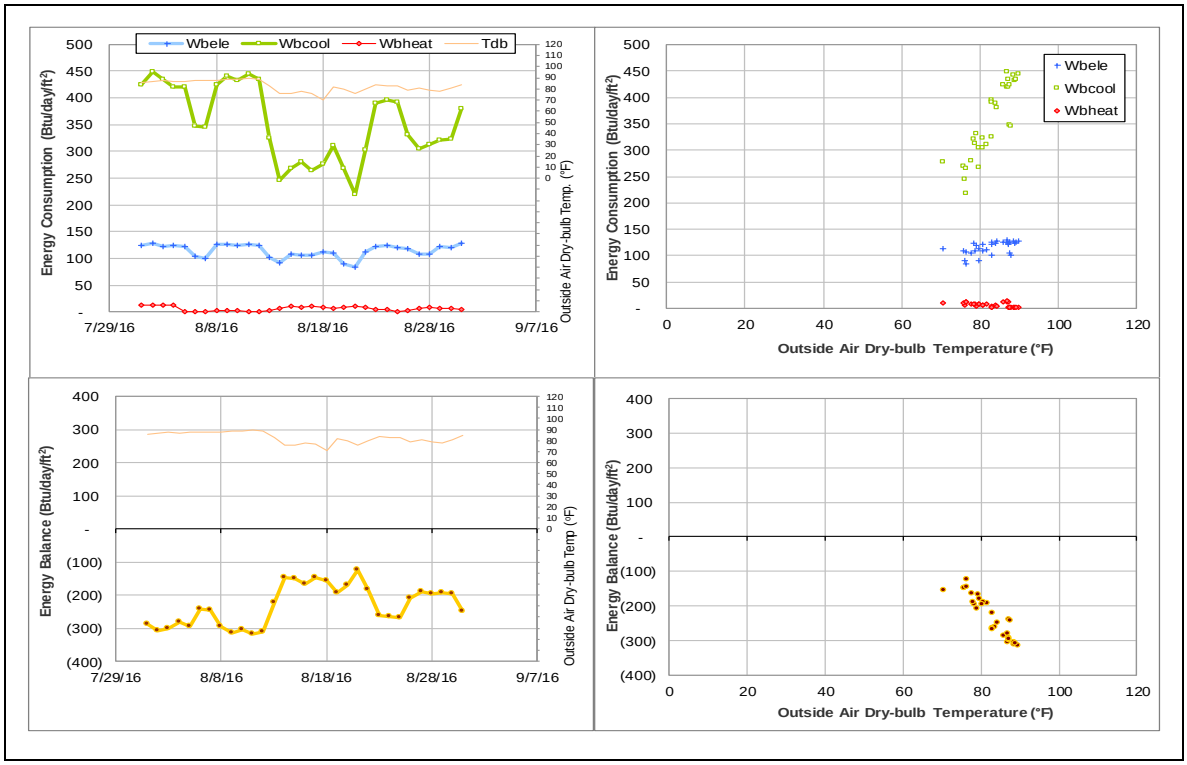
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during August 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Adams Band Hall (TAMU Bldg #448)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002555	15	8/3/2016 – 8/17/2016	Model
HHW	002566	15	8/3/2016 – 8/17/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption dropped for a short period.	8/3/2016 – 8/17/2016
HHW	The consumption dropped for a short period.	8/3/2016 – 8/17/2016

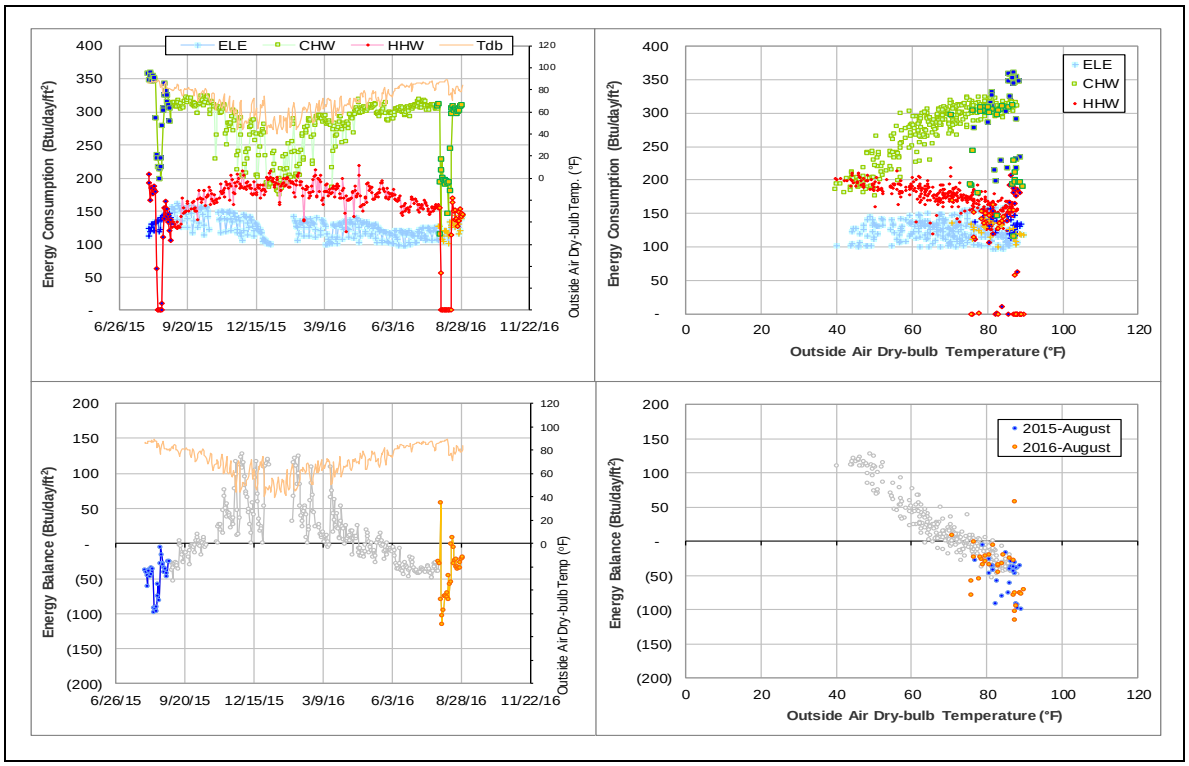
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	002555	8/3/2016 – 8/17/2016	Return Temperature	Decreased
HHW	002566	8/3/2016 – 8/17/2016	Flow rate	Zero

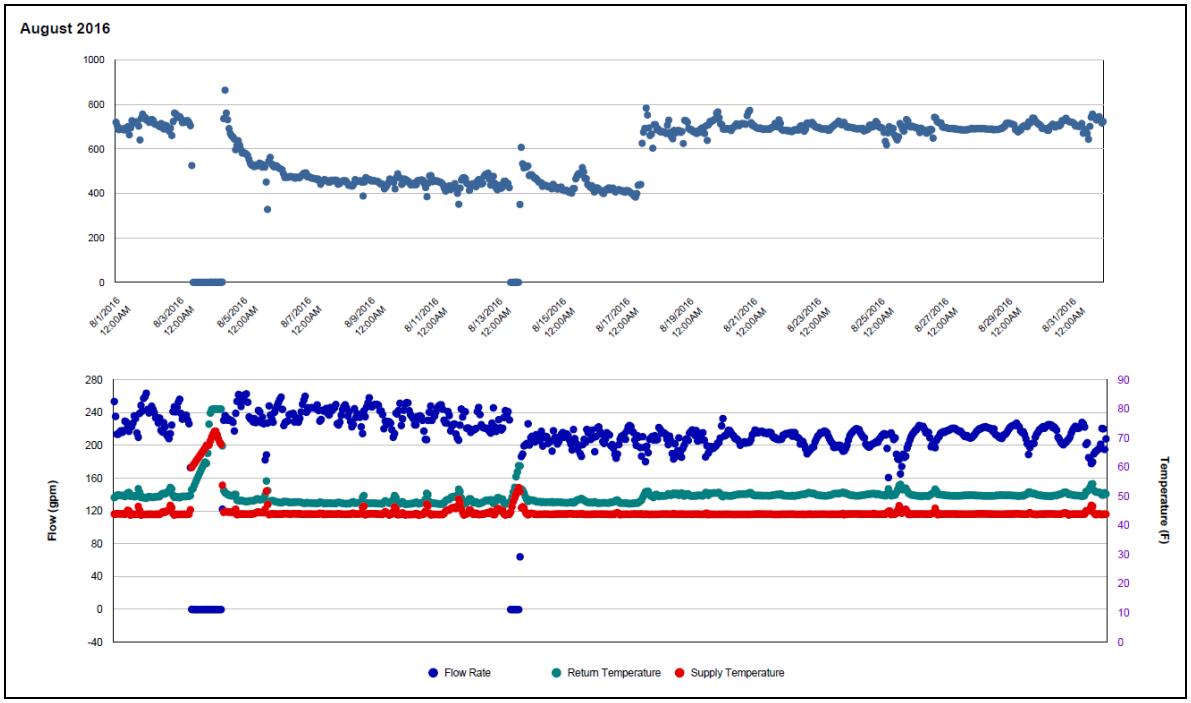
Quantitative descriptions and comments

Flow of HHW decreased to zero during 8/3 – 8/17/2016. HHW temperatures and CHW return temperature responded accordingly, resulting in a simultaneous CHW consumption decrease of 100 Btu/day-sf. Some scatters are observed in EB plot. There was also a small 30 gpm decrease of CHW flow on 8/13/2016 but this did not affect the consumption significantly. Very short periods of zero flow of CHW appeared on 8/3, 8/4 and 8/13/2016.

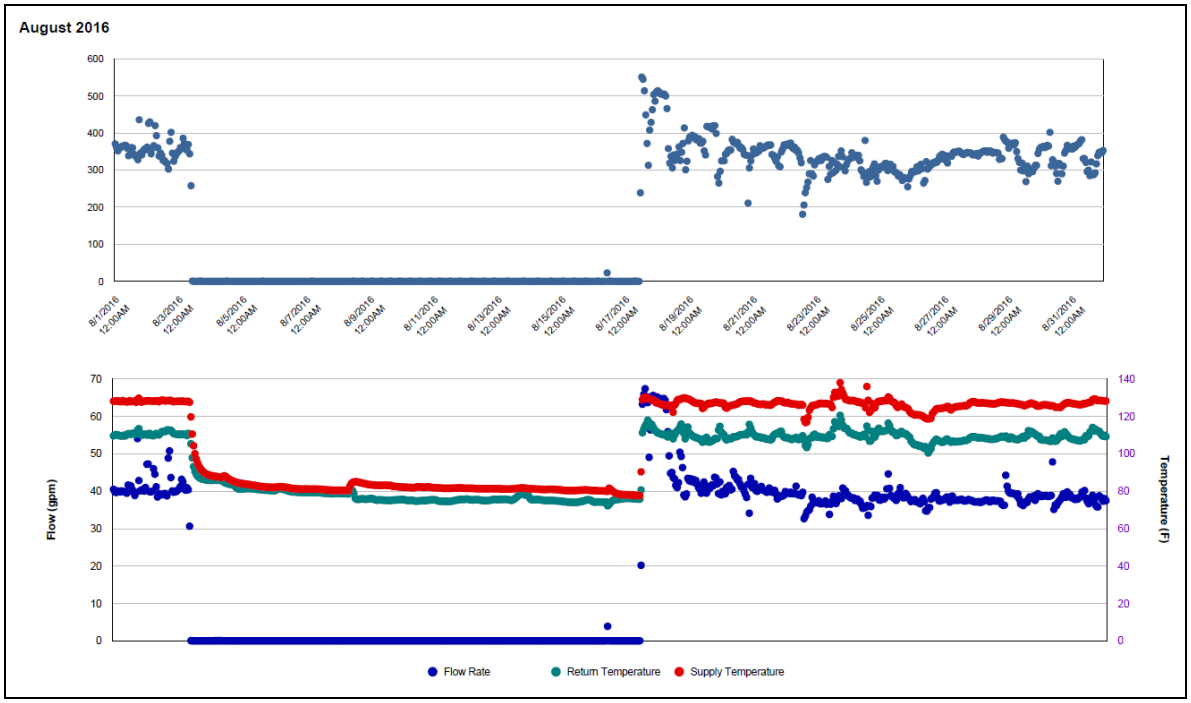
Explanatory Figure: 13 months energy balance plot with original data



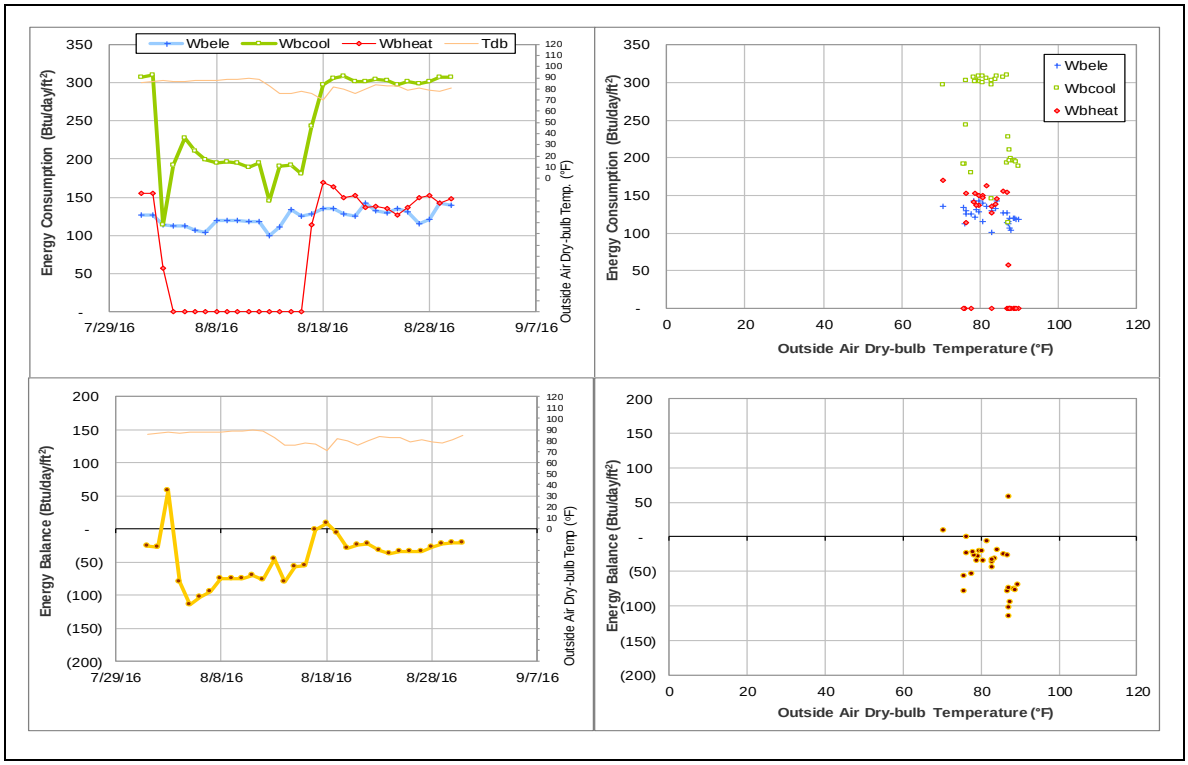
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during August 2016)



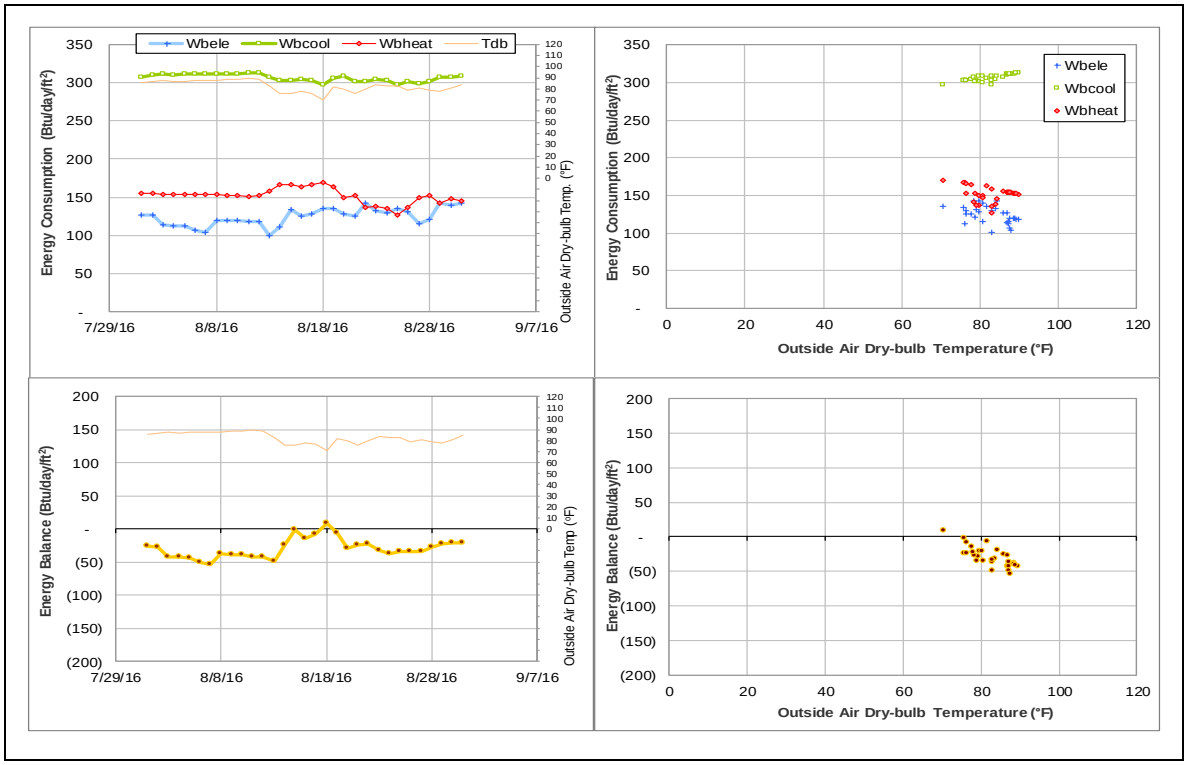
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during August 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Duncan Dining Hall (TAMU Bldg #450)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002998	10	8/3/2016 – 8/9/2016 8/13/2016 8/17/2016 – 8/18/2016	Model
HHW	003009	24	8/3/2016 – 8/17/2016 8/23 – 8/31	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption dropped for a short period.	8/3/2016 – 8/9/2016 8/13/2016
	The consumption increased for a short period.	8/17 – 8/18/2016
HHW	The consumption dropped for a short period.	8/3/2016 – 8/17/2016 8/23/2016 – ongoing

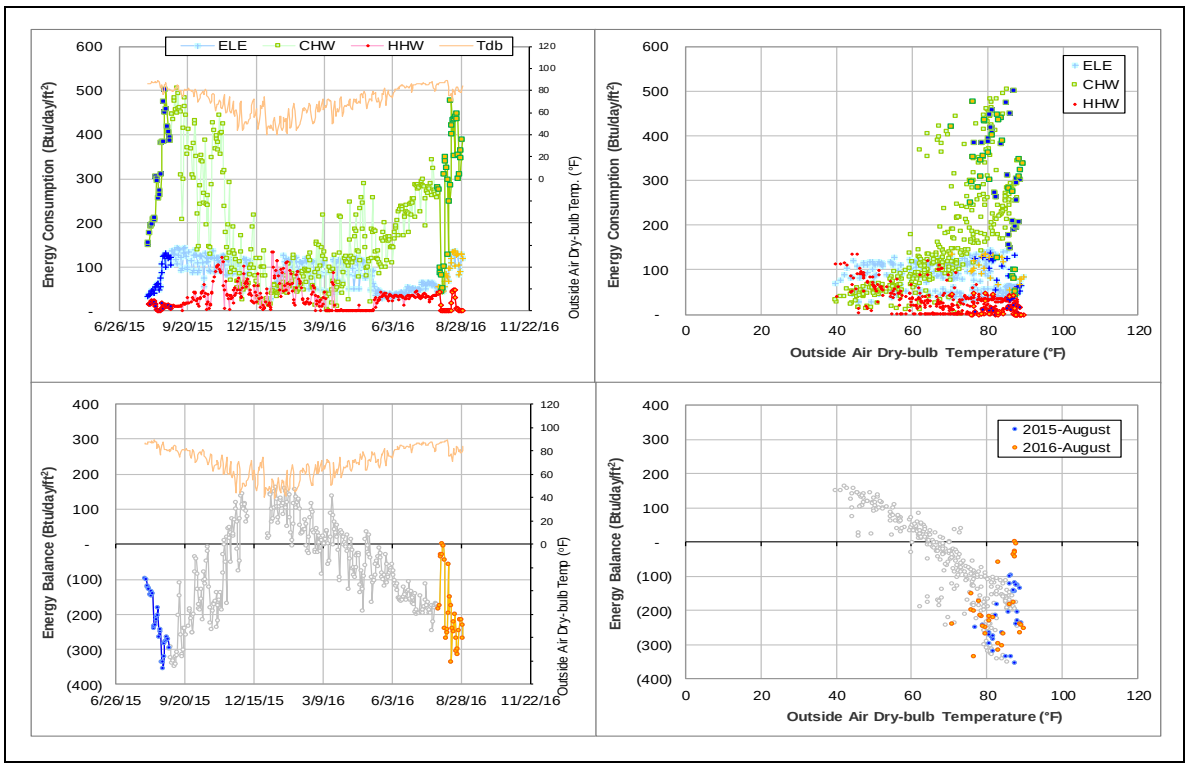
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW HHW	002998 003009	8/3/2016 – 8/9/2016 8/13/2016	Flow rate	Decreased
		8/17 – 8/18/2016	Flow rate	Increased
CHW	002998	8/3/2016 – 8/17/2016 8/23/2016 – ongoing	Flow rate	Zero

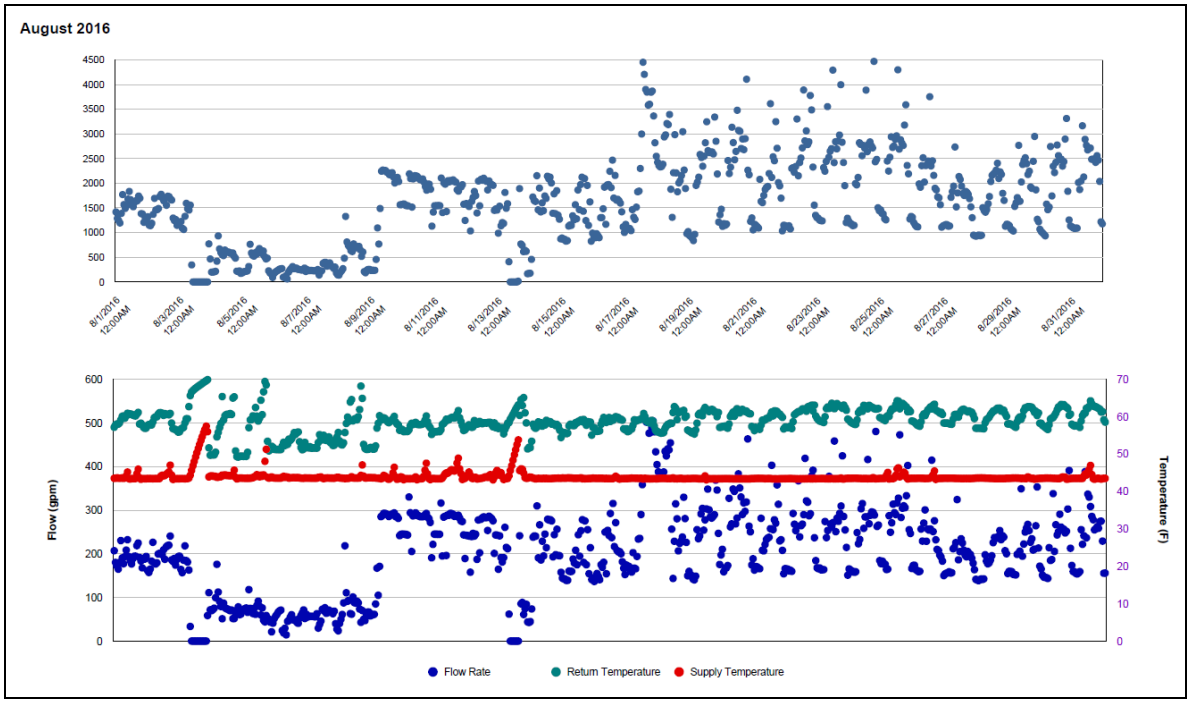
Quantitative descriptions and comments

Utilities of this building are not stable. CHW flow rate had been fluctuating for multiple days by approximately 250 Btu/day-sf. HHW had zero flow during 8/3 – 8/17/2016, and the temperatures responded accordingly. The flow rate dropped to zero again starting 8/23/2016, but this time it caused a larger temperature difference. The consumption is estimated by a model.

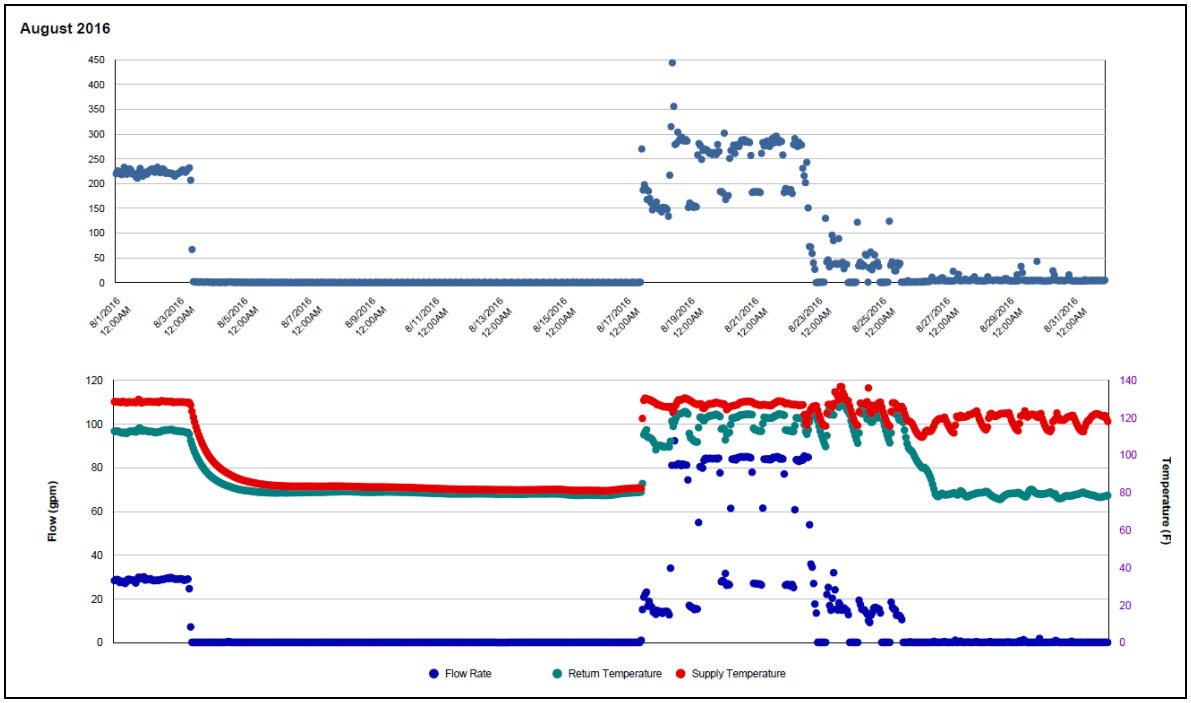
Explanatory Figure: 13 months energy balance plot with original data



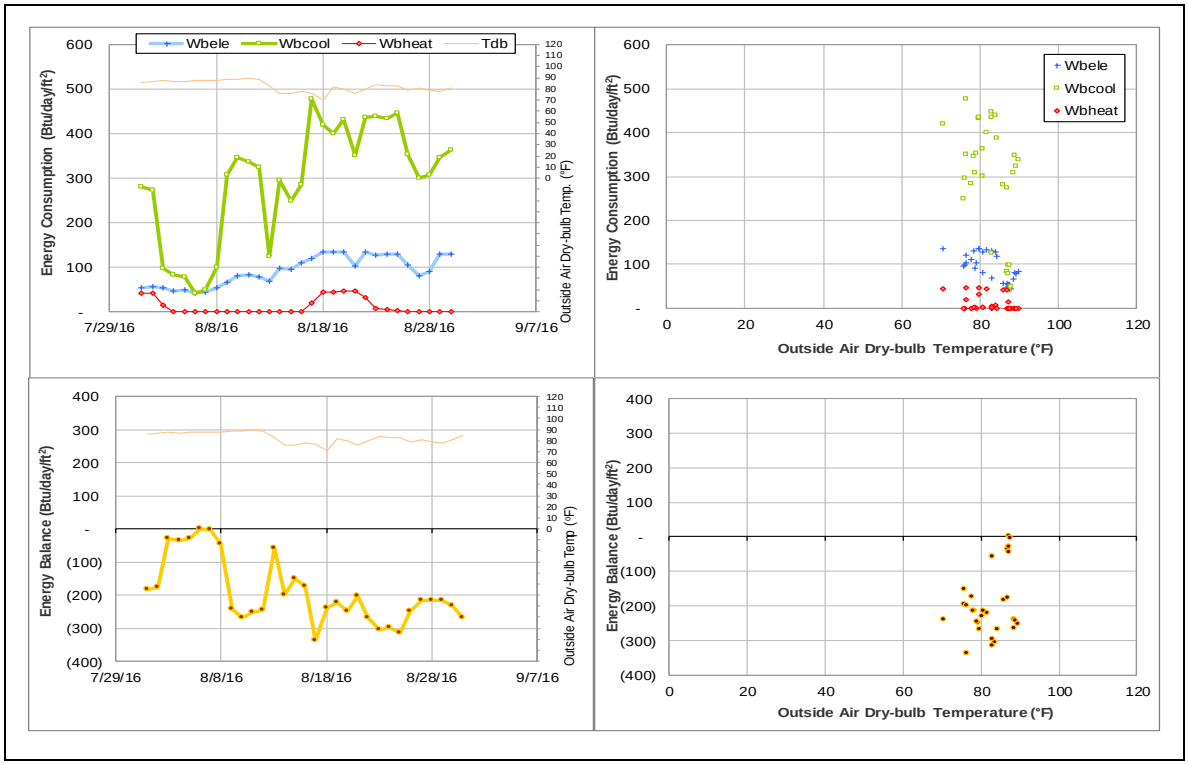
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during August 2016)



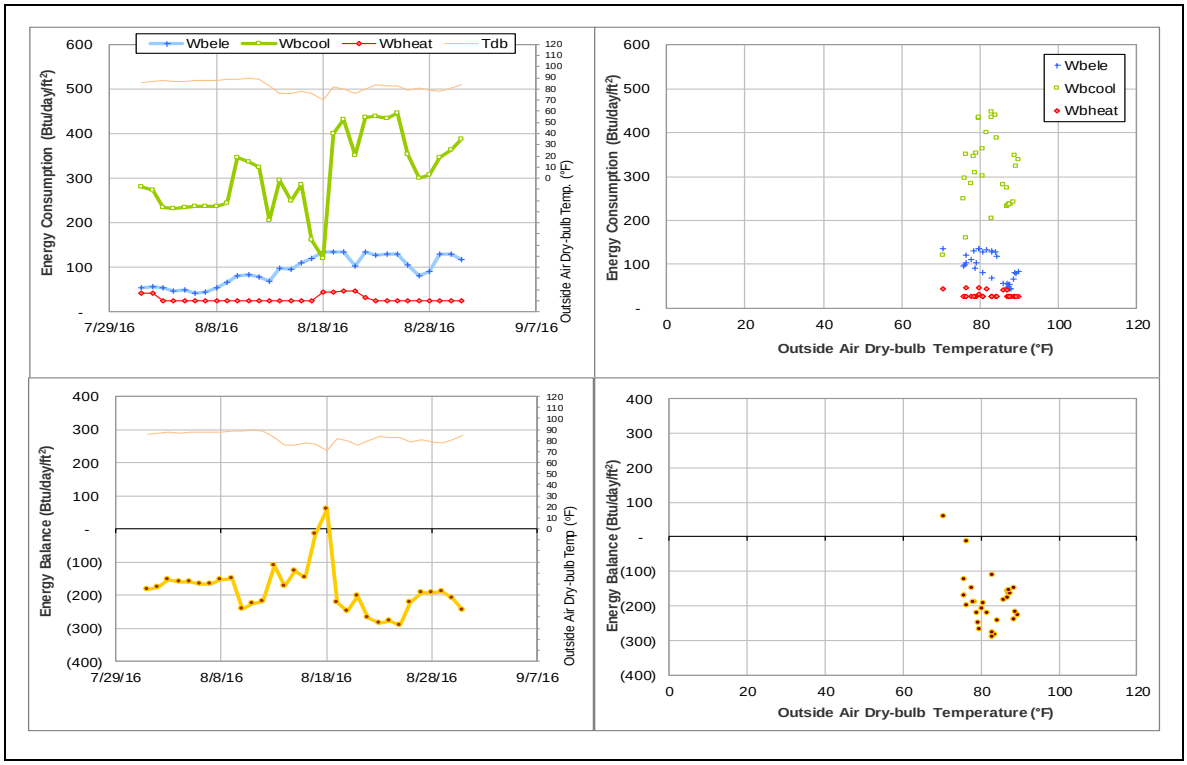
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during August 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Academic Building (TAMU Bldg #462)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	005905	31	8/1/2016 – 8/31/2016	Model
HHW	005909	31	8/1/2016 – 8/31/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	Large increase in consumption.	7/16/2016 – 7/28/2016
	Consumption drops to zero.	7/29/2016 – 8/15/2016
	Faulty readings or calculation.	8/16/2016 – ongoing
HHW	Large increase in consumption.	7/16/2016 – 7/28/2016
	Consumption drops to zero.	7/29/2016 – 8/15/2016
	Faulty readings or calculation.	8/16/2016 – ongoing

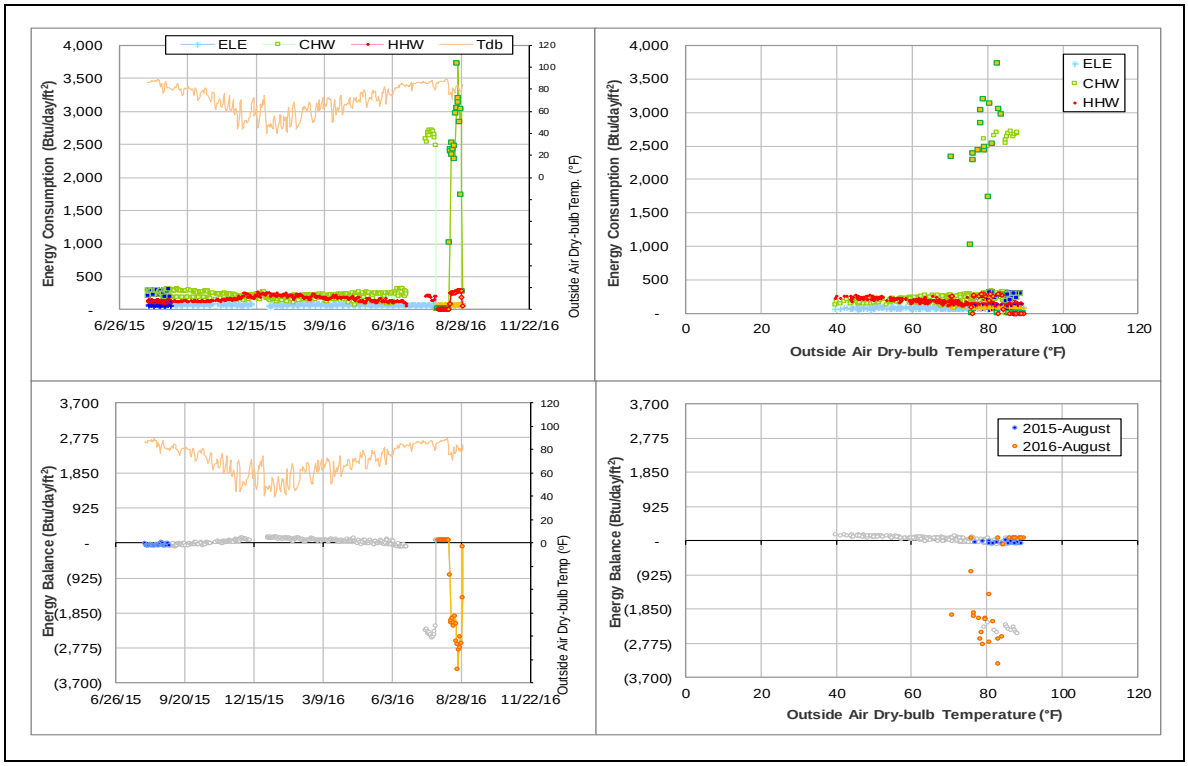
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	005905	7/16/2016 – 7/31/2016	mBtu	Calculated value seems faulty
		7/29/2016 – 7/31/2016	Flow rate	Sudden decrease to zero
			Delta-T	Sudden decrease to zero
		8/16/2016 – ongoing	mBtu	Calculated value seems faulty
HHW	005909	7/16/2016 – 7/31/2016	mBtu	Calculated value seems faulty
		7/29/2016 – 7/31/2016	Flow rate	Sudden decrease to zero
			Delta-T	Sudden decrease to zero
		8/16/2016 – ongoing	mBtu	Calculated value seems faulty

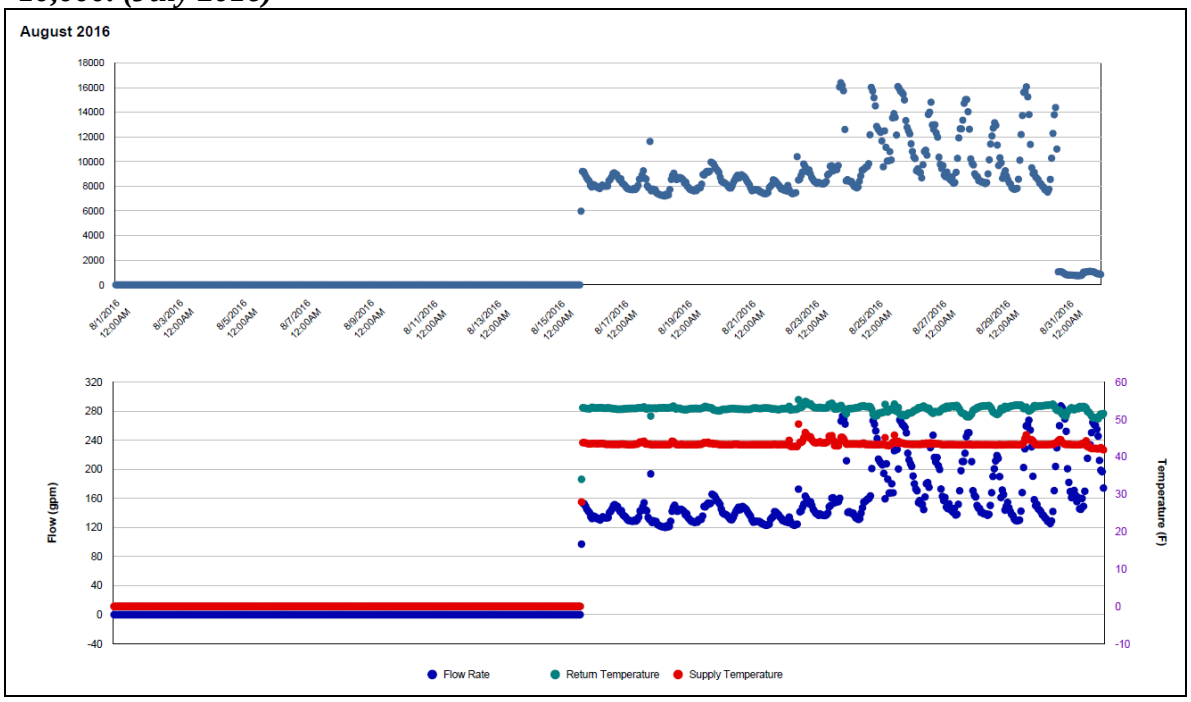
Quantitative descriptions and comments

From 7/1/2016-7/15/2016, the meter data for both CHW and HHW is missing. Starting 7/16/2016, the meter data returns, but at higher than usual levels. The HHW daily consumption increased around 50% while the CHW daily consumption increased by about 900%. The calculated CHW and HHW mBtu seems faulty for the flow rate and delta T measured. Starting 7/29/2016 and through the end of the month, the flow rate and Delta-T for both CHW and HHW went to zero. Meter readings were recovered starting 8/16/2016 but the calculation is not correct. This appears to have been corrected on 8/30/2016 but it requires further observations. CHW and HHW consumption was estimated using a model.

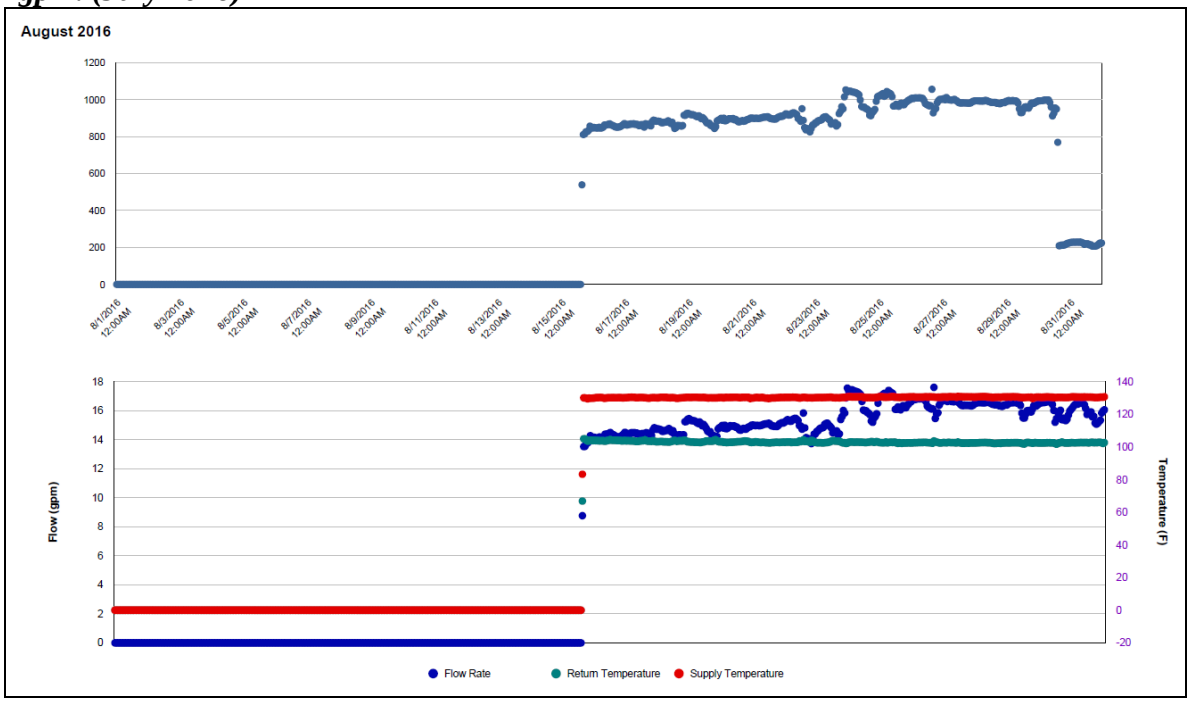
Explanatory Figure: 13 months energy balance plot with original data.



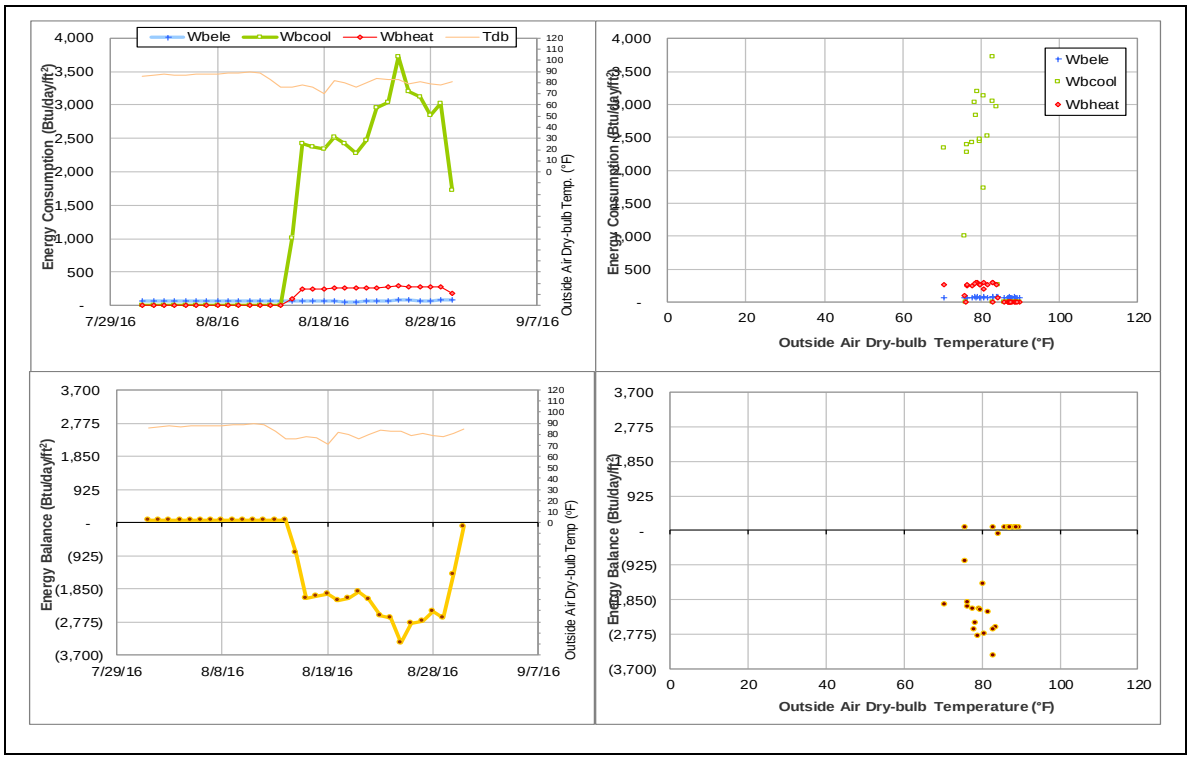
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow rate, and supply and return temperatures from the utilities office. Days 7/1/2016 through 7/15/2016 are missing. Note the level of mBtu being calculated, between 8000 and 10,000. (July 2016)



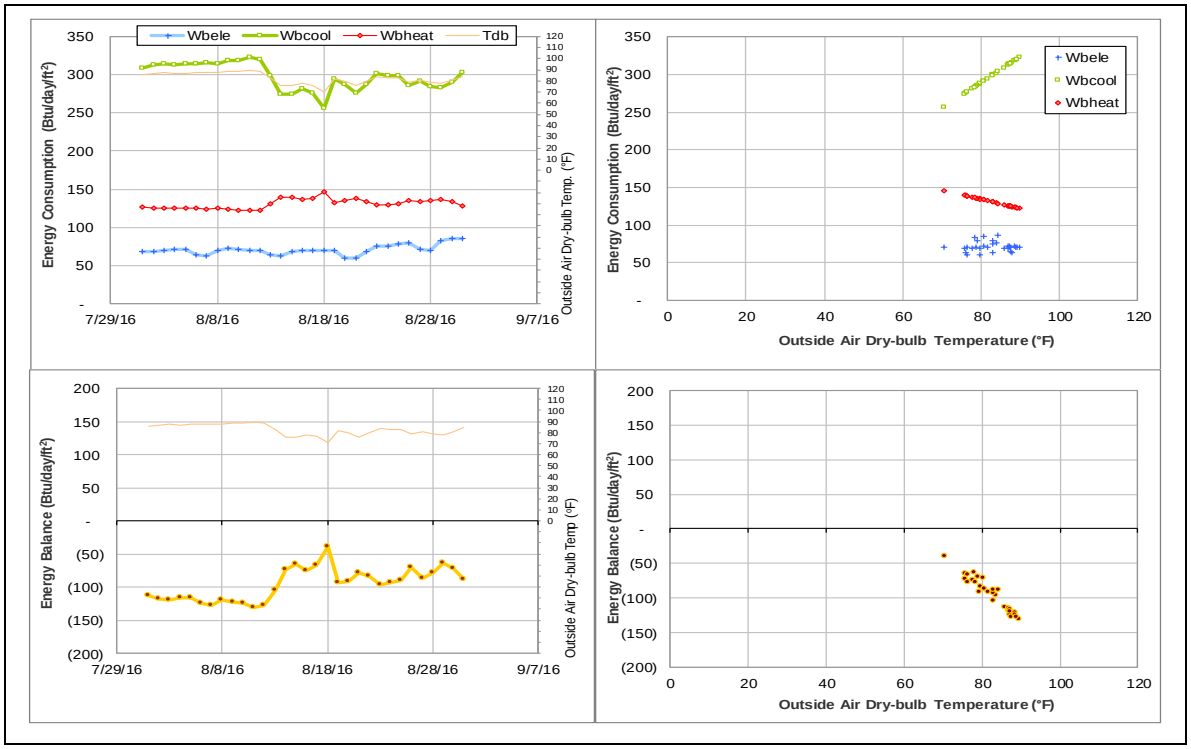
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from the utilities office. Days 7/1/2016 through 7/15/2016 are missing. Note the level of mBtu around 700 with only a flow rate of 12 gpm. (July 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



Fermier Hall (TAMU Bldg #482)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	005881	22	8/10/2016 – 8/31/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	Decrease in HHW energy consumption.	8/10/2016 – Ongoing

Changes in sensor readings related to the detected issues

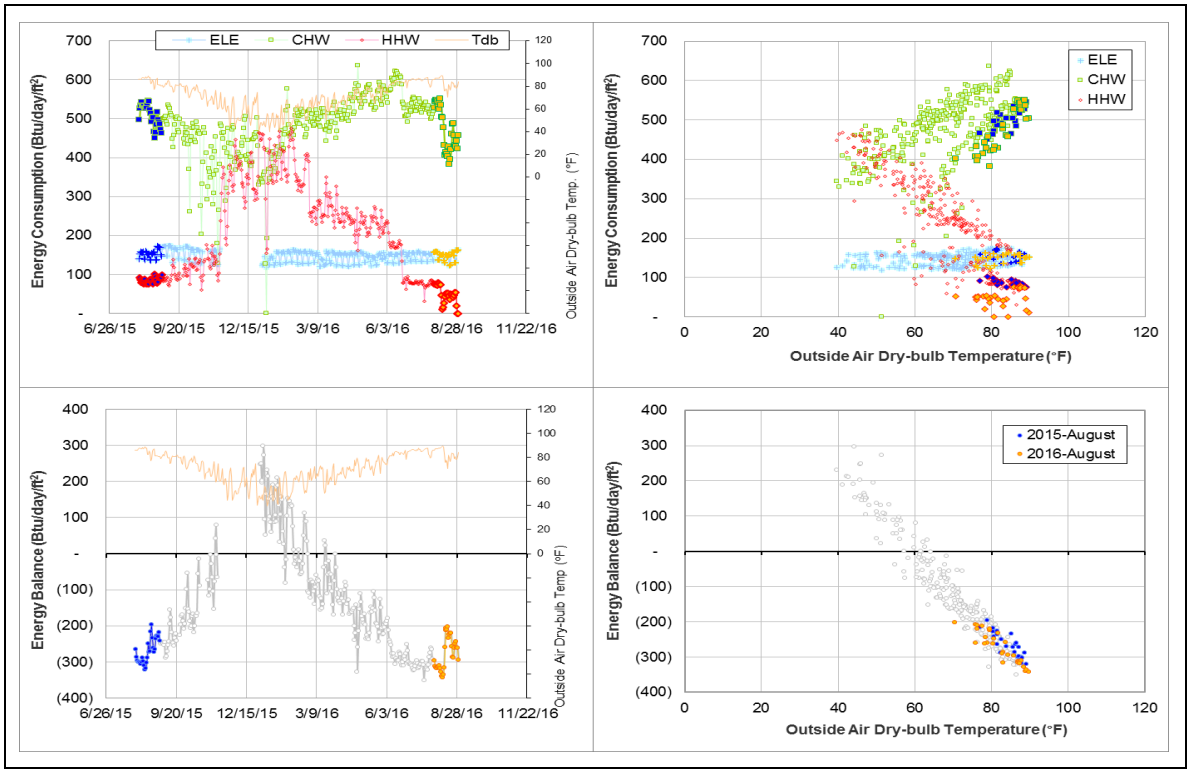
Energy Type	Meter ID	Period	Type	Description
HHW	005881	8/10/2016 – 8/29/2016	Flow rate	Decrease by over 50%
			Delta-T	Increase by over 50%
		8/29/2016 – Ongoing	Flow rate	Decrease to zero or near zero
			Delta-T	Decrease to zero or near zero

Quantitative descriptions and comments

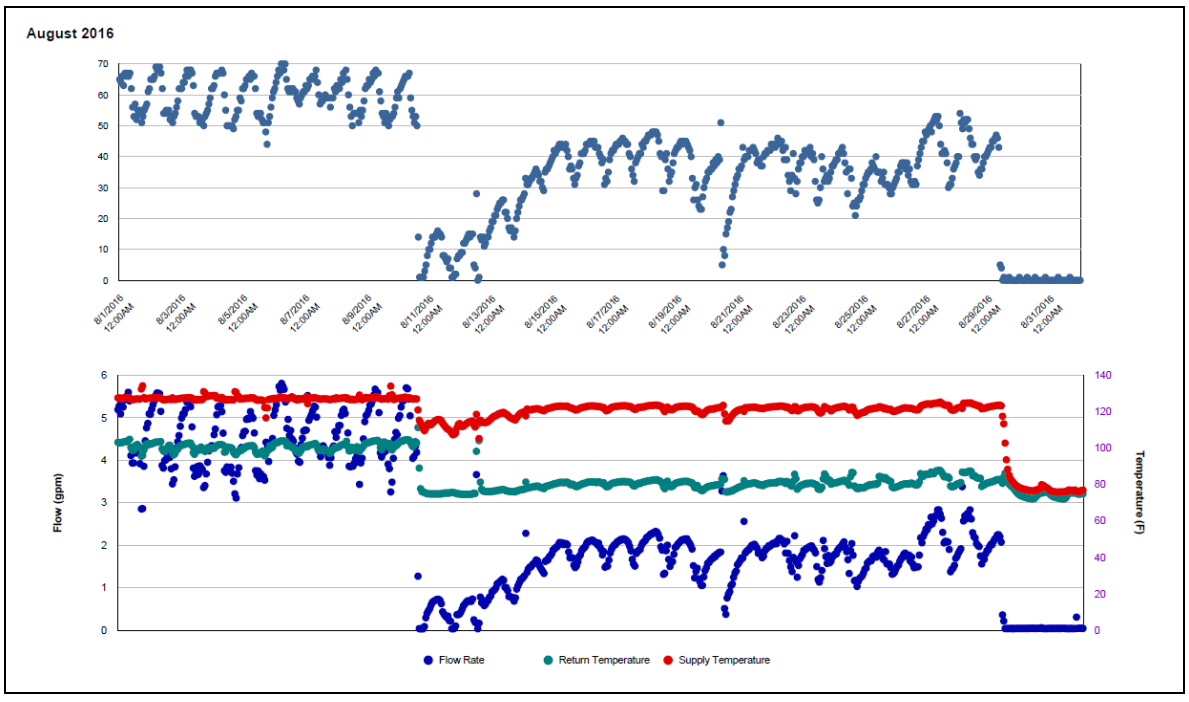
Starting on 8/10/2016, the HHW flow rate experienced a sudden drop in gpm by over 50% and remained in that range up to 8/29/2016. During the same time period, delta T experienced a sudden increase in temperature difference by over 50%. On 8/29/2016, both flow rate and delta T suddenly dropped again, but this time to zero or near zero. The HHW for these 22 days was estimated by model.

In June 2016, a lower CHW and HHW pattern started to emerge. Since the energy balance is still within the previous pattern and the meters appear to be functioning properly, estimation does not seem necessary for this reduction in consumption.

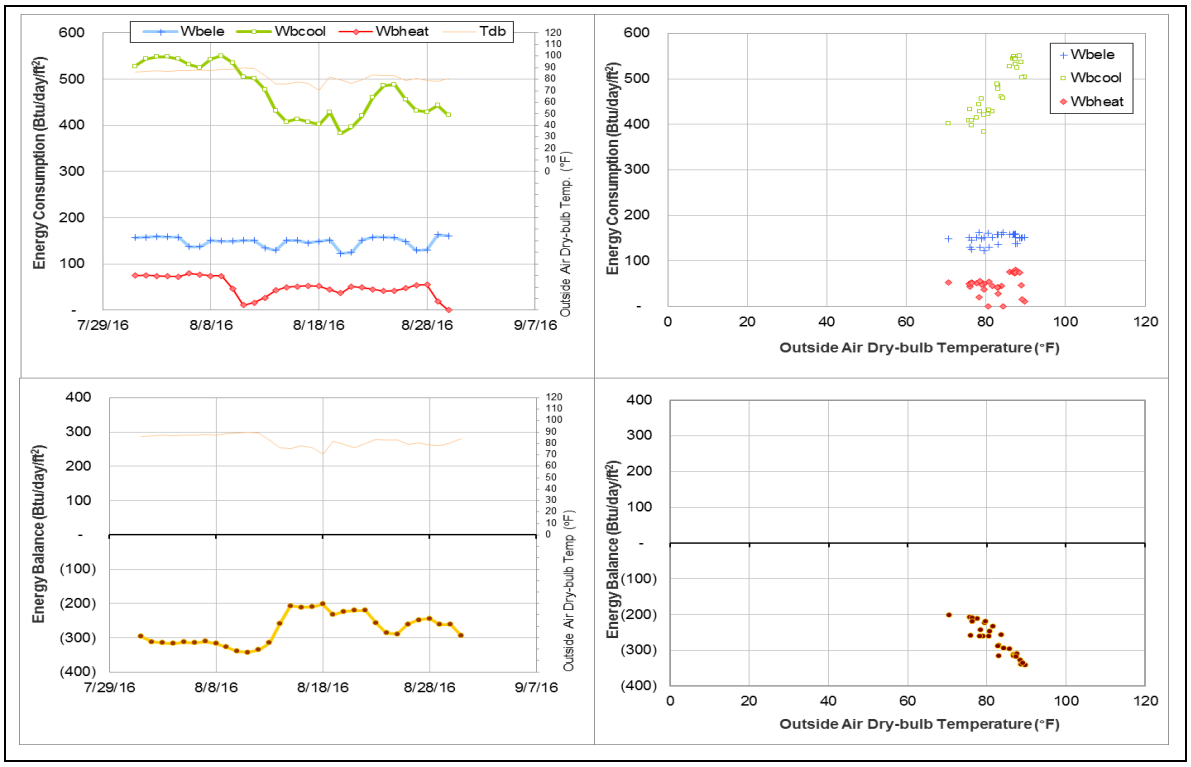
Explanatory Figure: 13 months energy balance plot with original data.



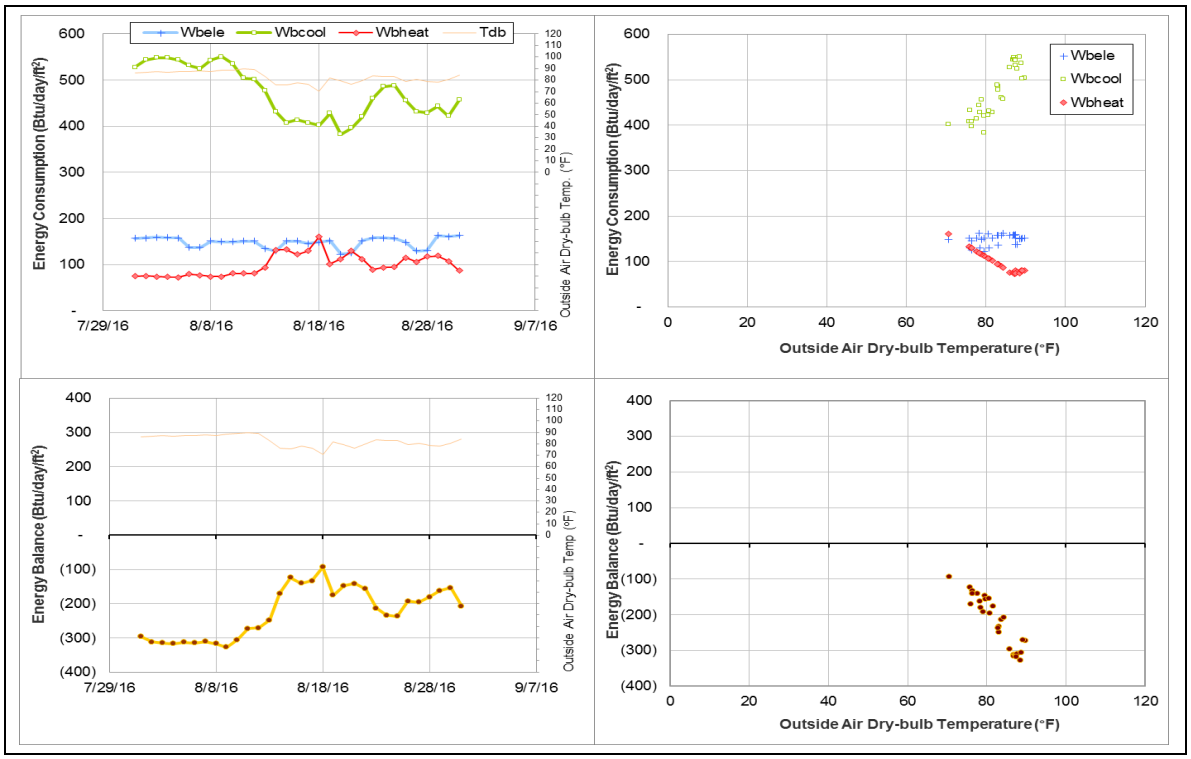
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from the utilities office. (August 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



Thompson Hall (TAMU Bldg #483)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	003887	31	8/1/2016 – 8/31/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	Energy consumption decreased to zero.	7/26/2016 – Ongoing

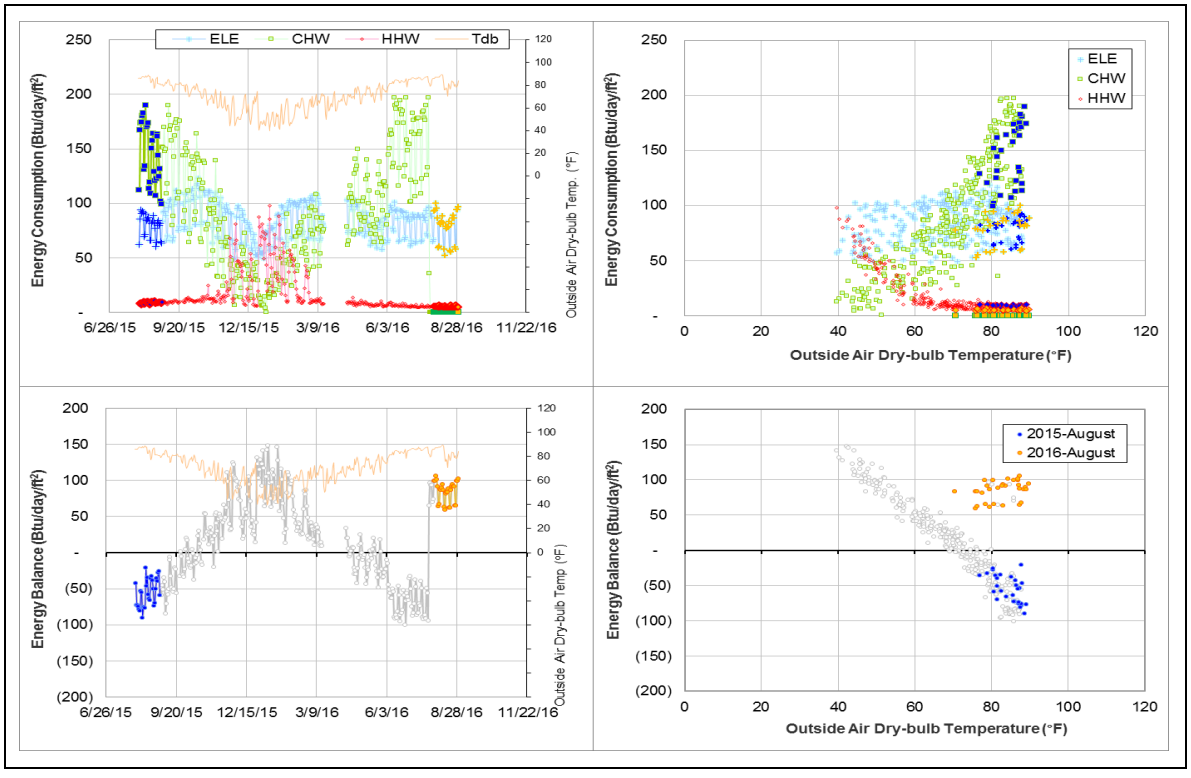
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	003887	7/26/2016 – Ongoing	Flow rate	Decreased to zero

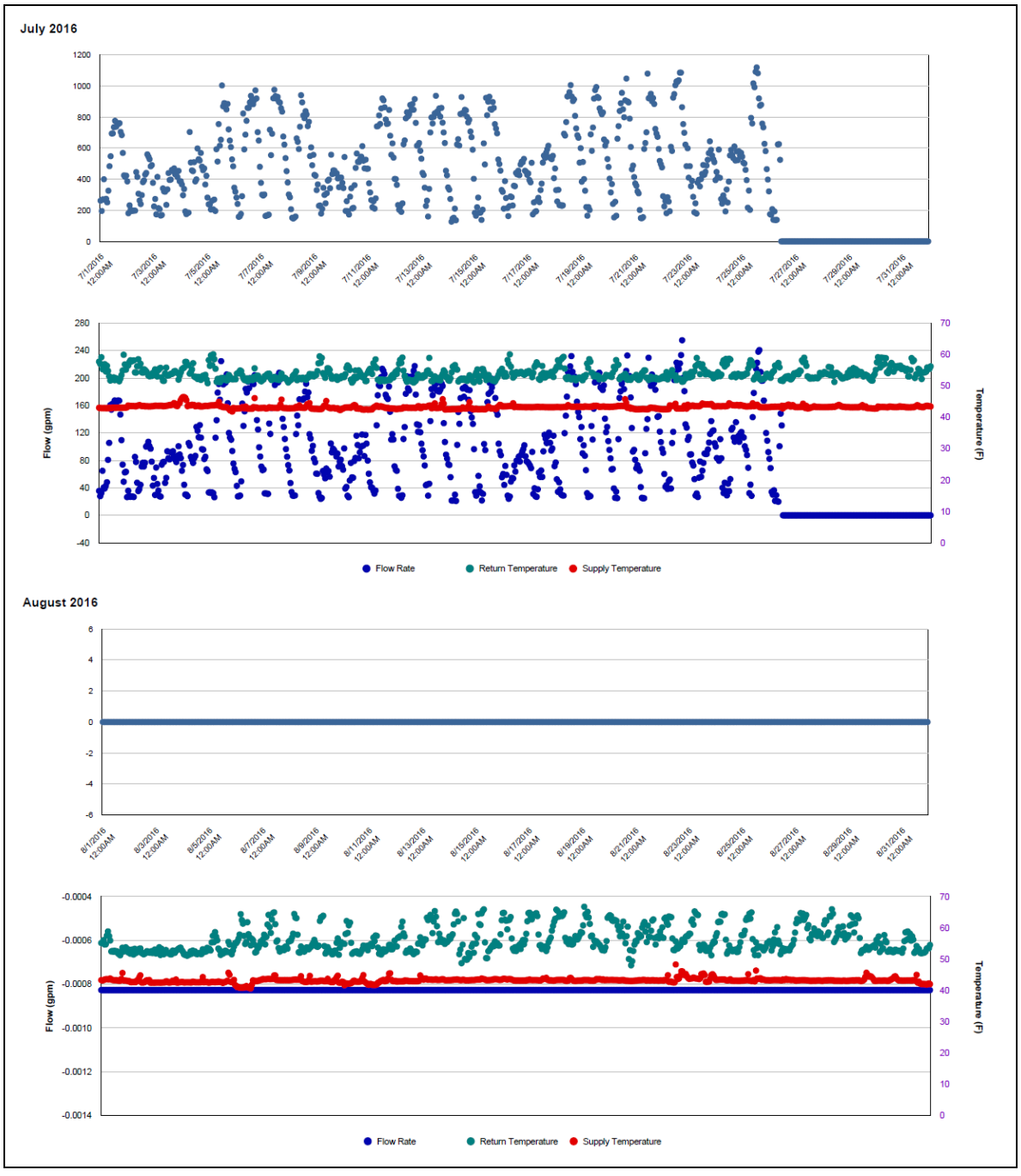
Quantitative descriptions and comments

Starting 7/26/2016, the flow rate for the CHW meter decreased to zero and remains zero for the month of August as well. The delta T does not appear to have changed. The CHW consumption was estimated by model for August.

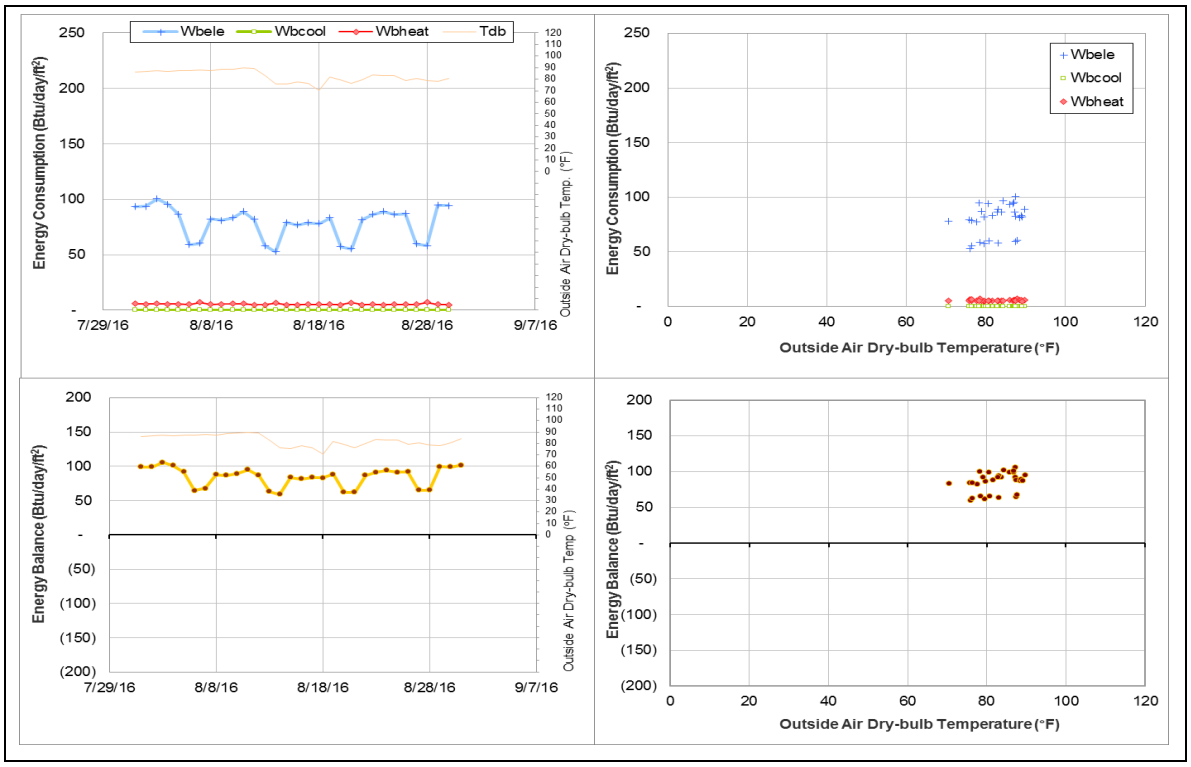
Explanatory Figure: 13 months energy balance plot with original data.



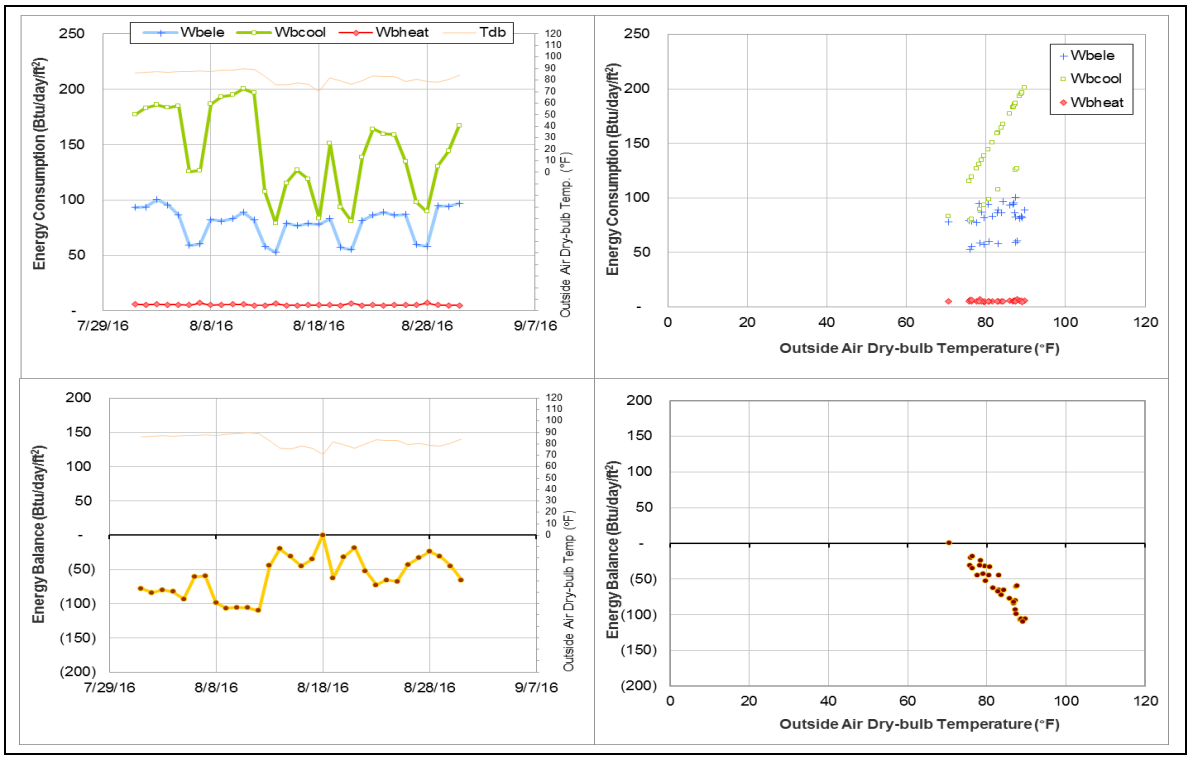
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow rate, and supply and return temperatures from the utilities office. (top: July 2016, bottom: August 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



Civil Engineering Building (TAMU Bldg # 492)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	005954	31	8/1/2016 – 8/31/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	HHW consumption level increased.	8/1/2016 – Ongoing

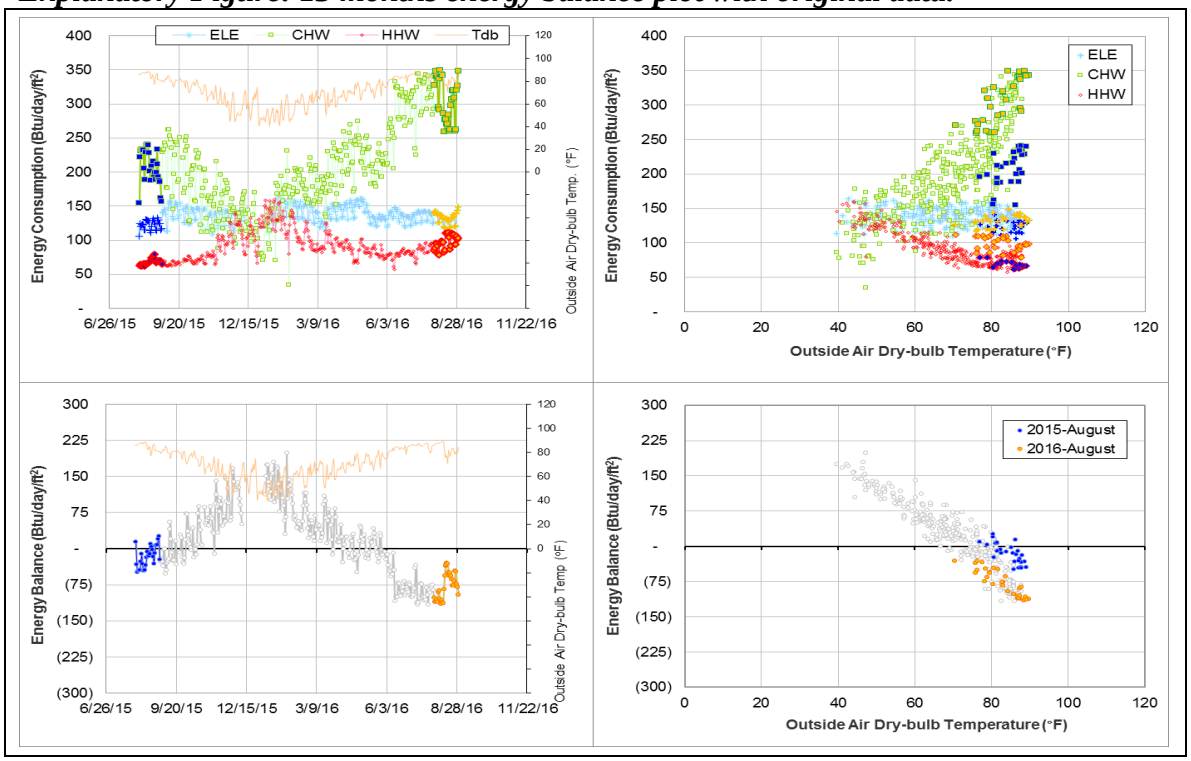
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	005954	8/1/2016 – Ongoing	Delta-T	Increased

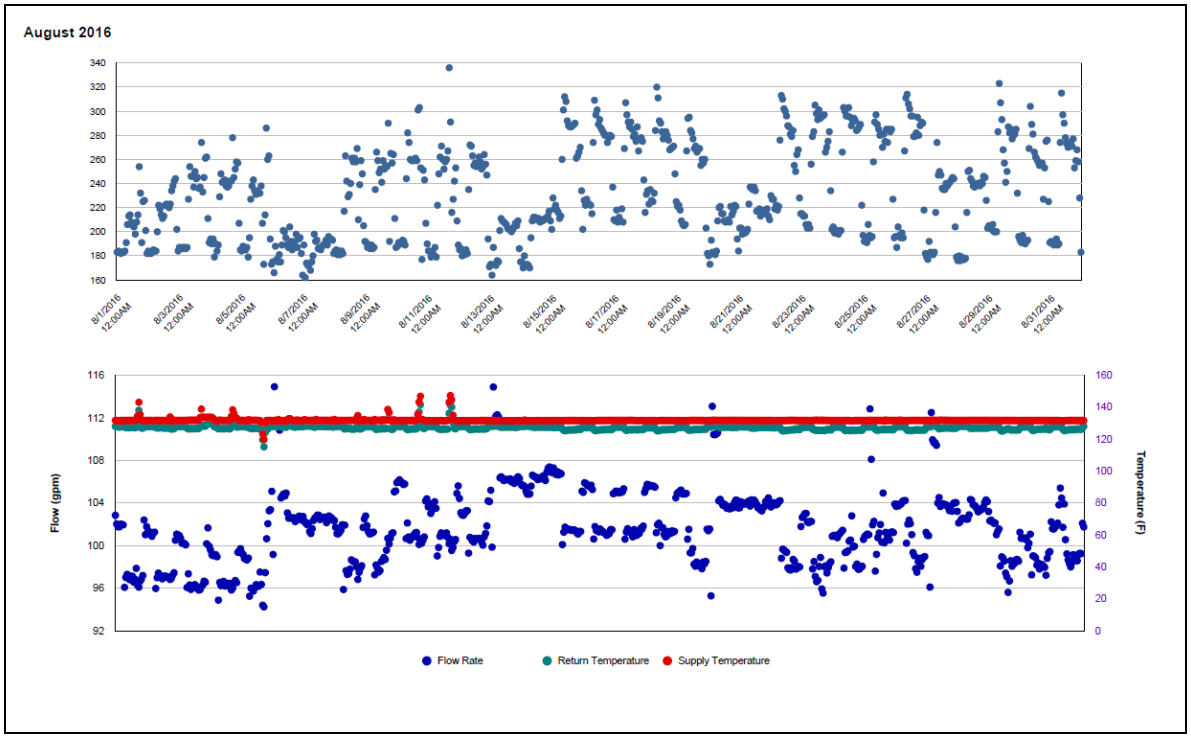
Quantitative descriptions and comments

The HHW delta T is showing an increase for the month of August. The HHW pattern for August can be seen sitting well above the 13-month pattern in the energy balance plot below. The HHW was estimated by model for this period.

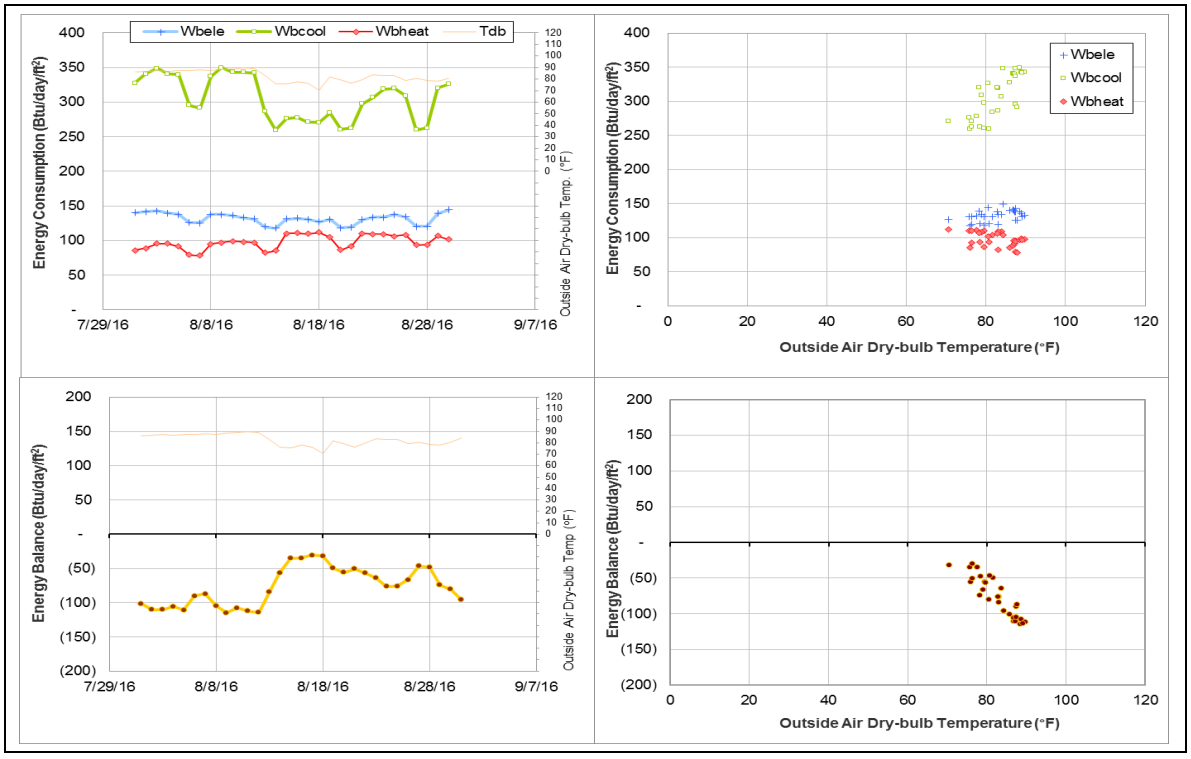
Explanatory Figure: 13 months energy balance plot with original data.



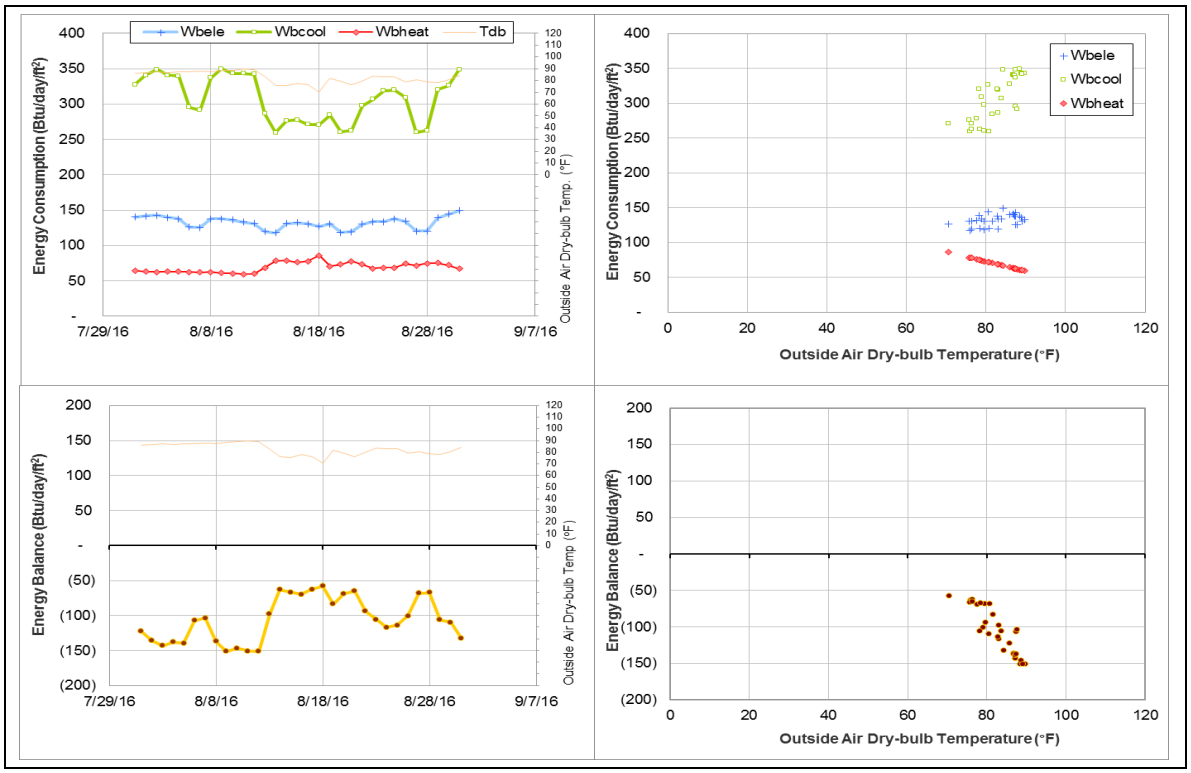
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from the utilities office. (August 2016)



Energy balance plot using the original data for the month of analysis.



Energy balance plot using the estimated data for the month of analysis



Heep Laboratory Building (TAMU Bldg #511)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	005821	31	8/1/2016 – 8/31/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level increased.	6/14/2016 – Ongoing
Energy Balance	The energy balance pattern dropped.	6/14/2016 – Ongoing

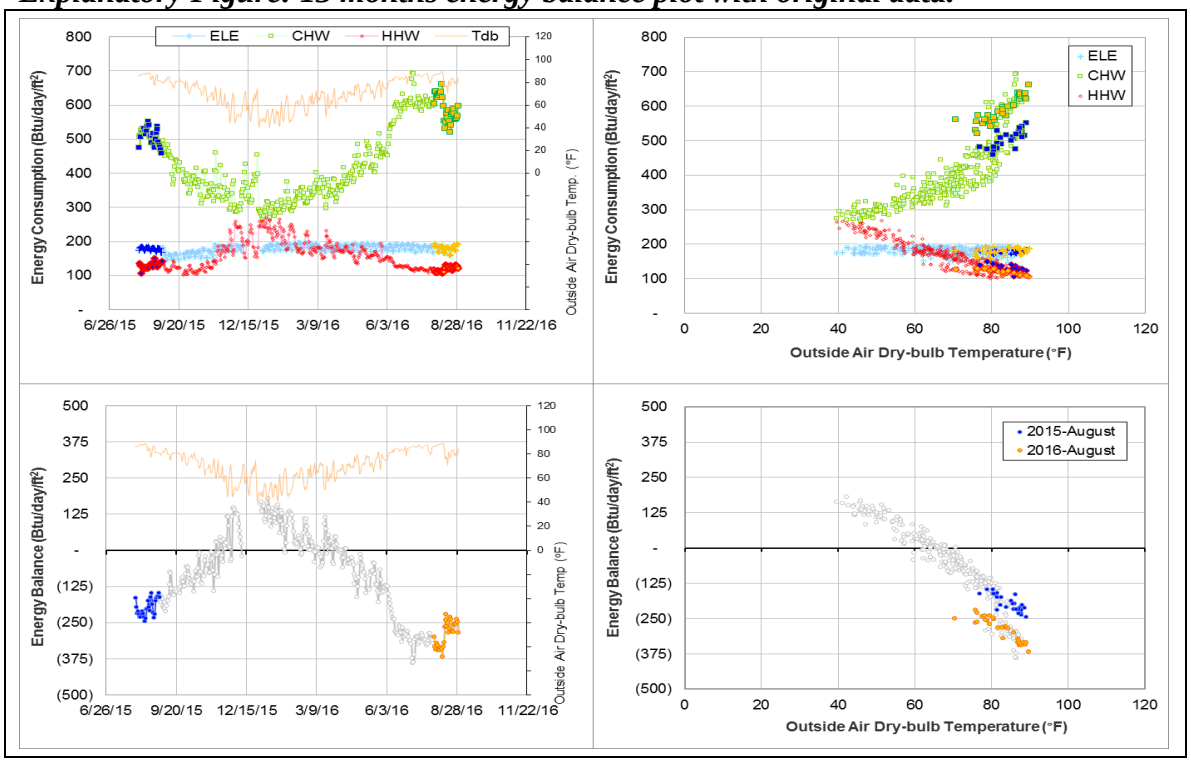
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	005821	6/14/2016 – Ongoing	Delta-T	Increased

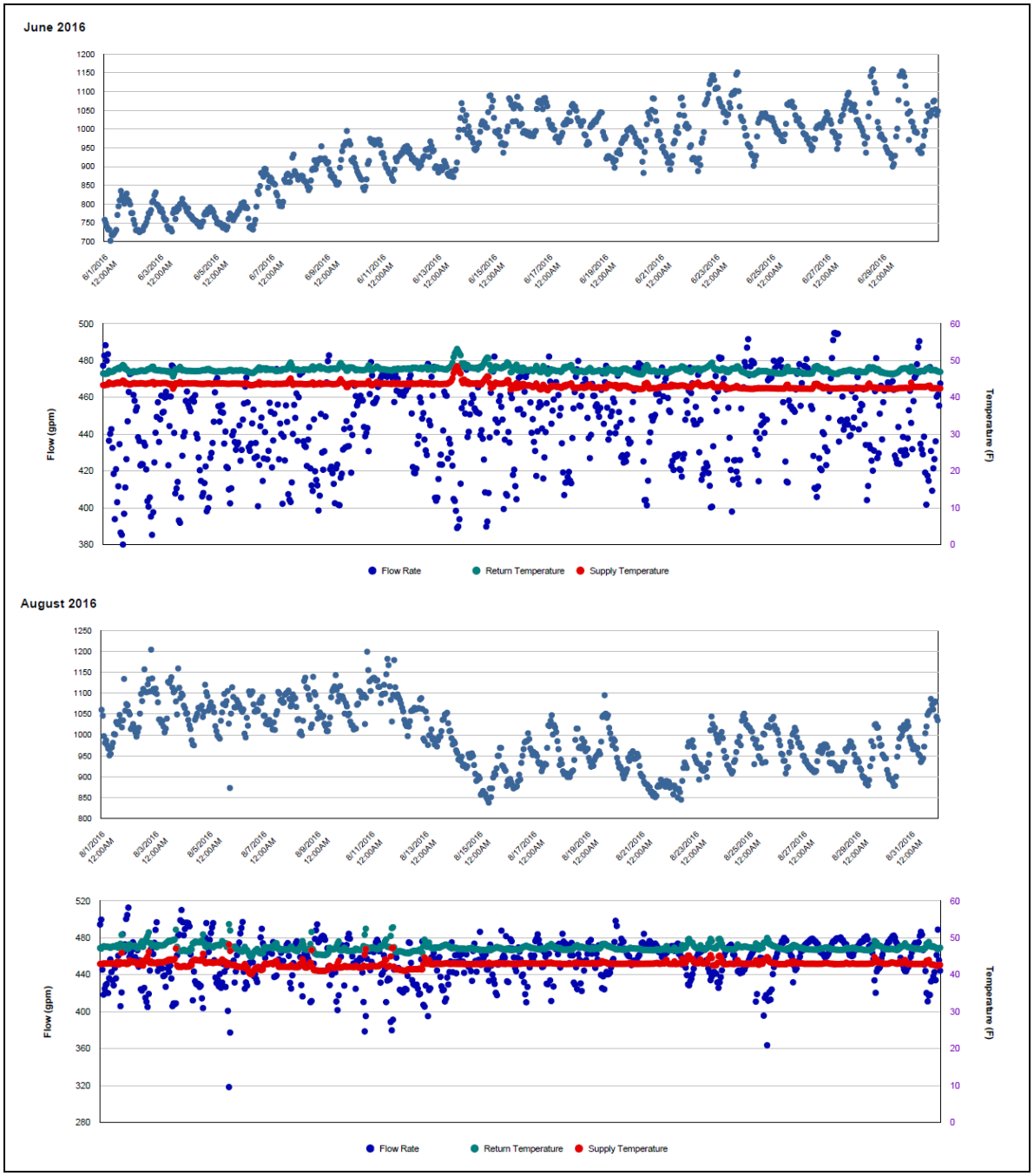
Quantitative descriptions and comments

The CHW consumption increased by 100 Btu/day/ft^2 starting around 6/14/2016 and the pattern continues through August. This increased energy consumption pattern can be clearly seen sitting above the 13-month pattern in the energy balance plot below. This appears to be due to an increase in delta T. Also, the pattern for the building's energy balance appears to have shifted downward, putting the change-point temperature below 60°F. CHW consumption was estimated by model for August.

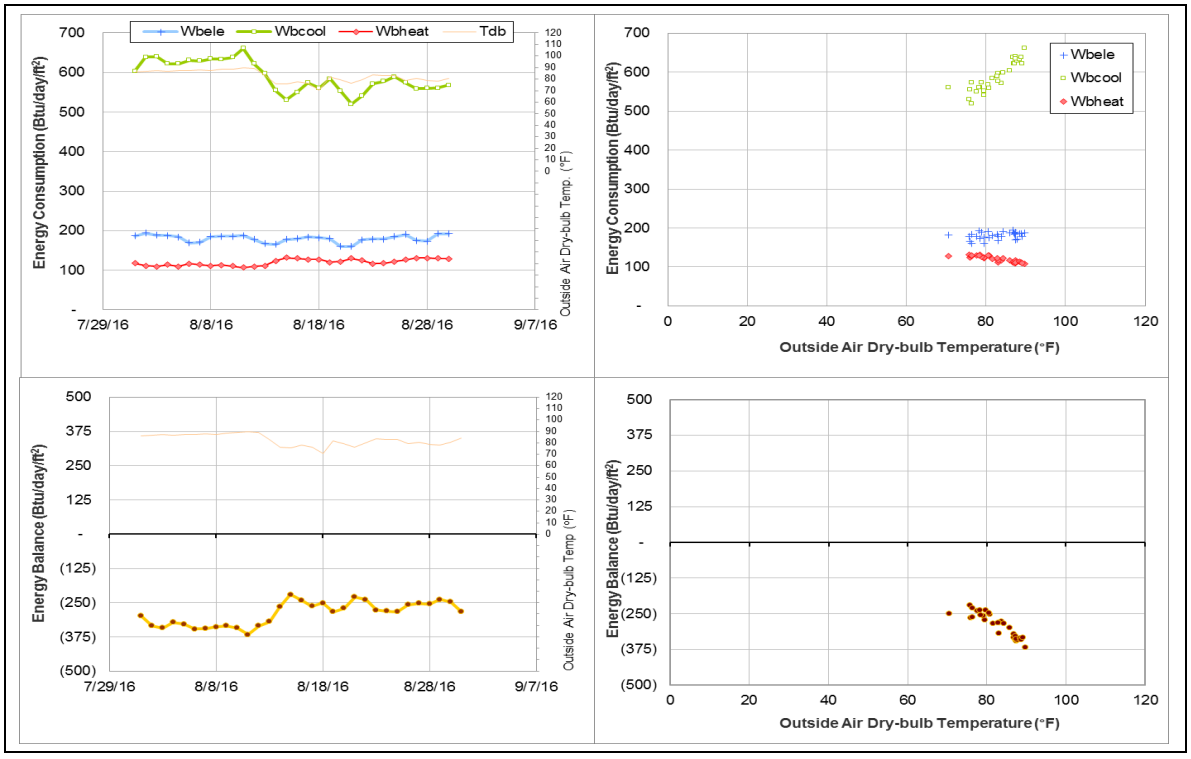
Explanatory Figure: 13 months energy balance plot with original data.



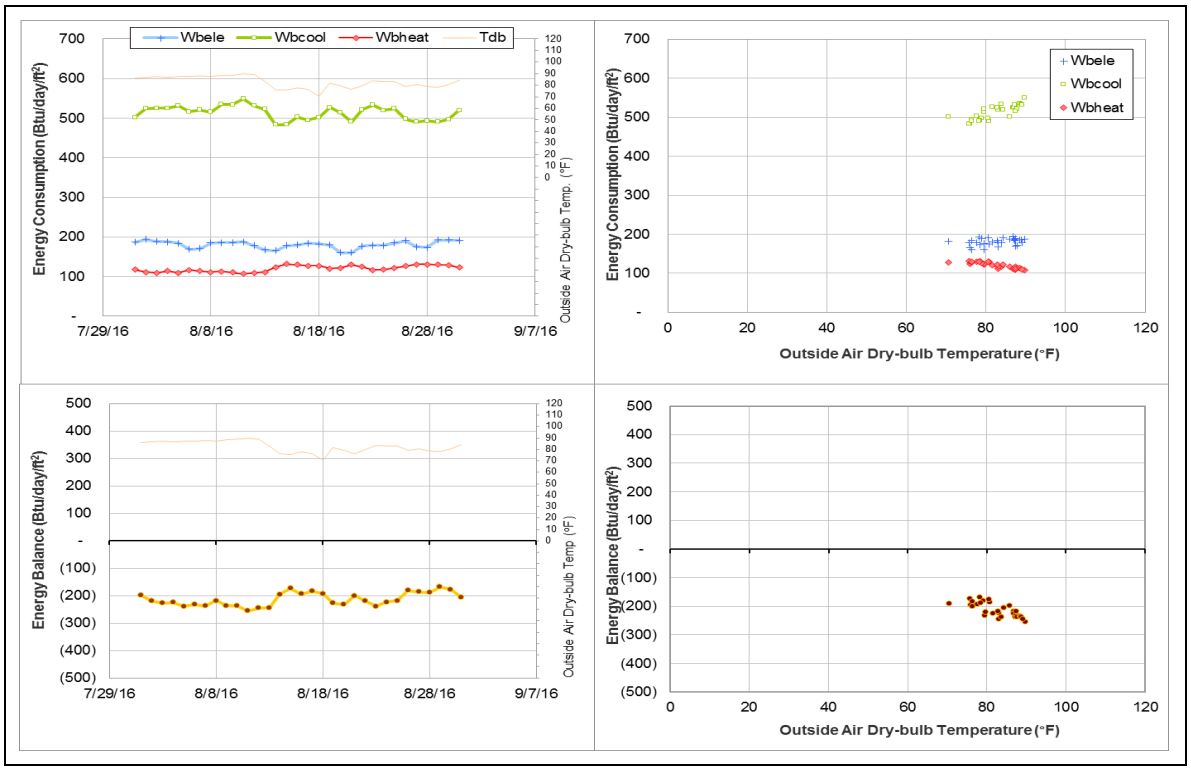
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow rate, and supply and return temperatures from the utilities office. (top: June 2016, bottom: August 2016) Note the gradual increase in delta T starting in June 2016.



Energy balance plot using the original data for the month of analysis.



Energy balance plot using the estimated data for the month of analysis



All Faiths Chapel (TAMU Bldg #512)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	004288	18	8/14/2016 – 8/31/2016	Model
HHW	004293	31	8/1/2016 – 8/31/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The CHW consumption decreased.	8/14/2016 – Ongoing
HHW	The HHW consumption decreased to near zero.	7/6/2016 – Ongoing

Changes in sensor readings related to the detected issues

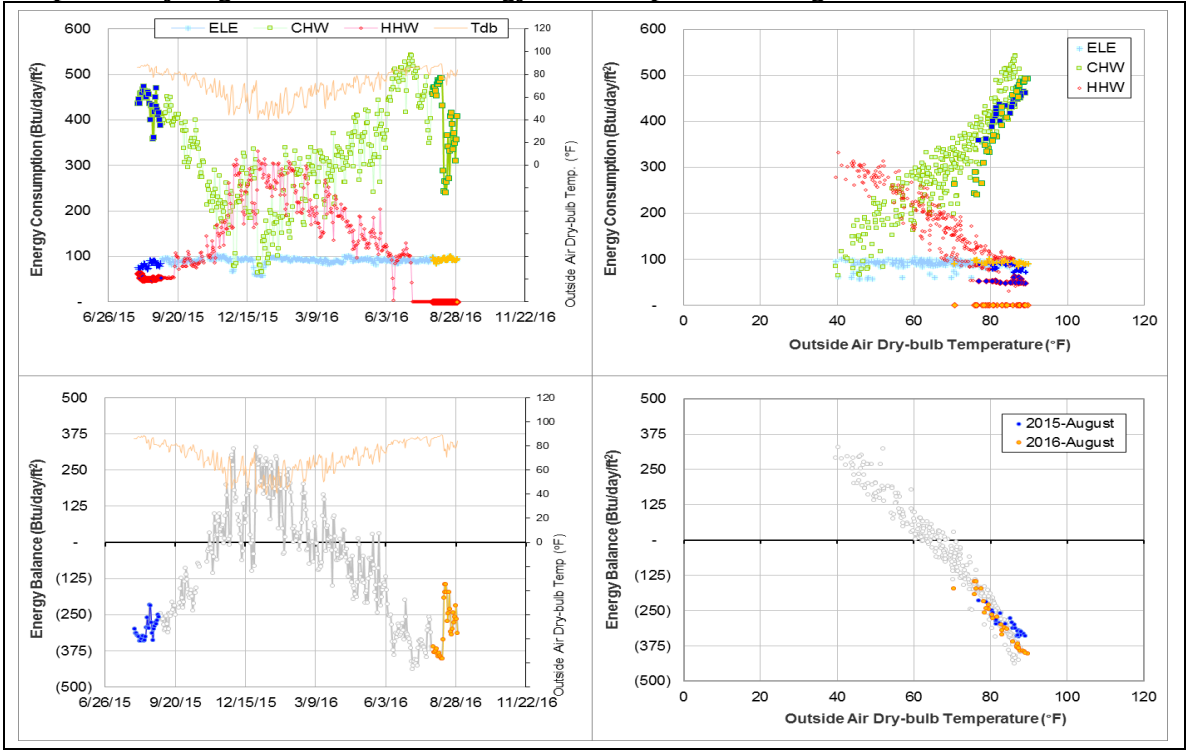
Energy Type	Meter ID	Period	Type	Description
CHW	004288	8/14/2016 – Ongoing	Delta-T	Decrease
HHW	004293	7/6/2016 – Ongoing	Flow rate	Sudden decrease, nearly zero
			Delta-T	Sudden decrease, nearly zero

Quantitative descriptions and comments

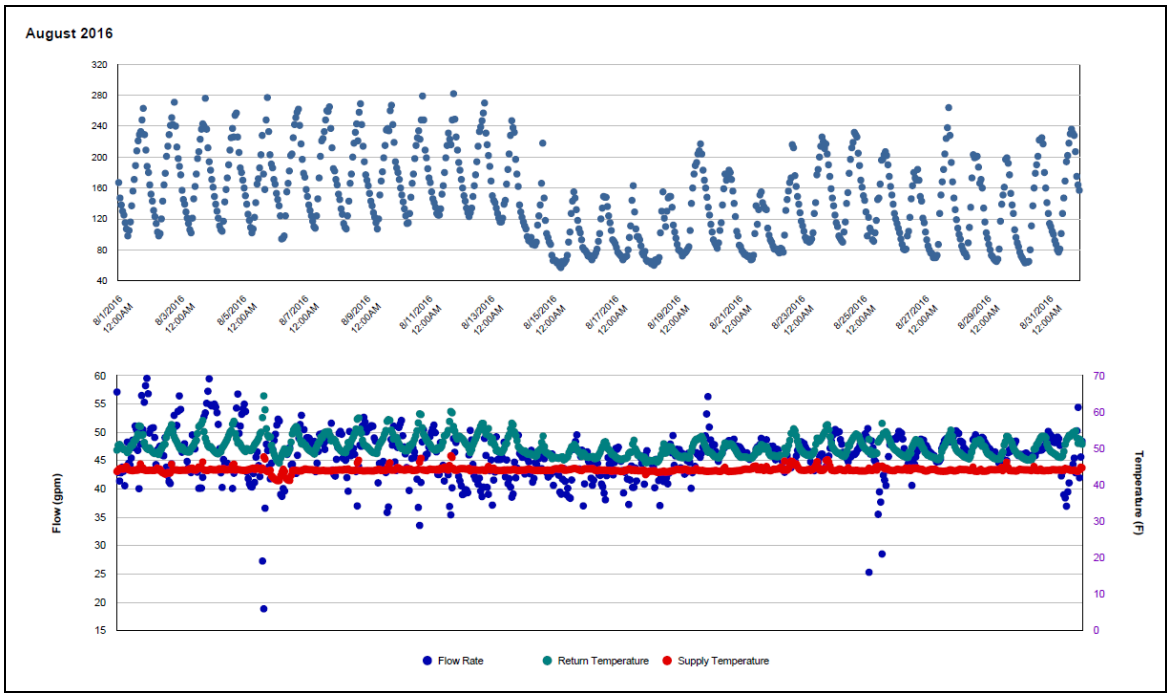
Starting around 8/14/2016, the CHW delta T appears to have decreased, and the resulting CHW energy consumption pattern shows to be lower than the pattern from this time last year. The CHW was estimated by model for this period.

Starting around 7/6/2016, the HHW flow rate and delta T suddenly decreased to near zero and has continued like this through August. The HHW was also estimated by model for this period.

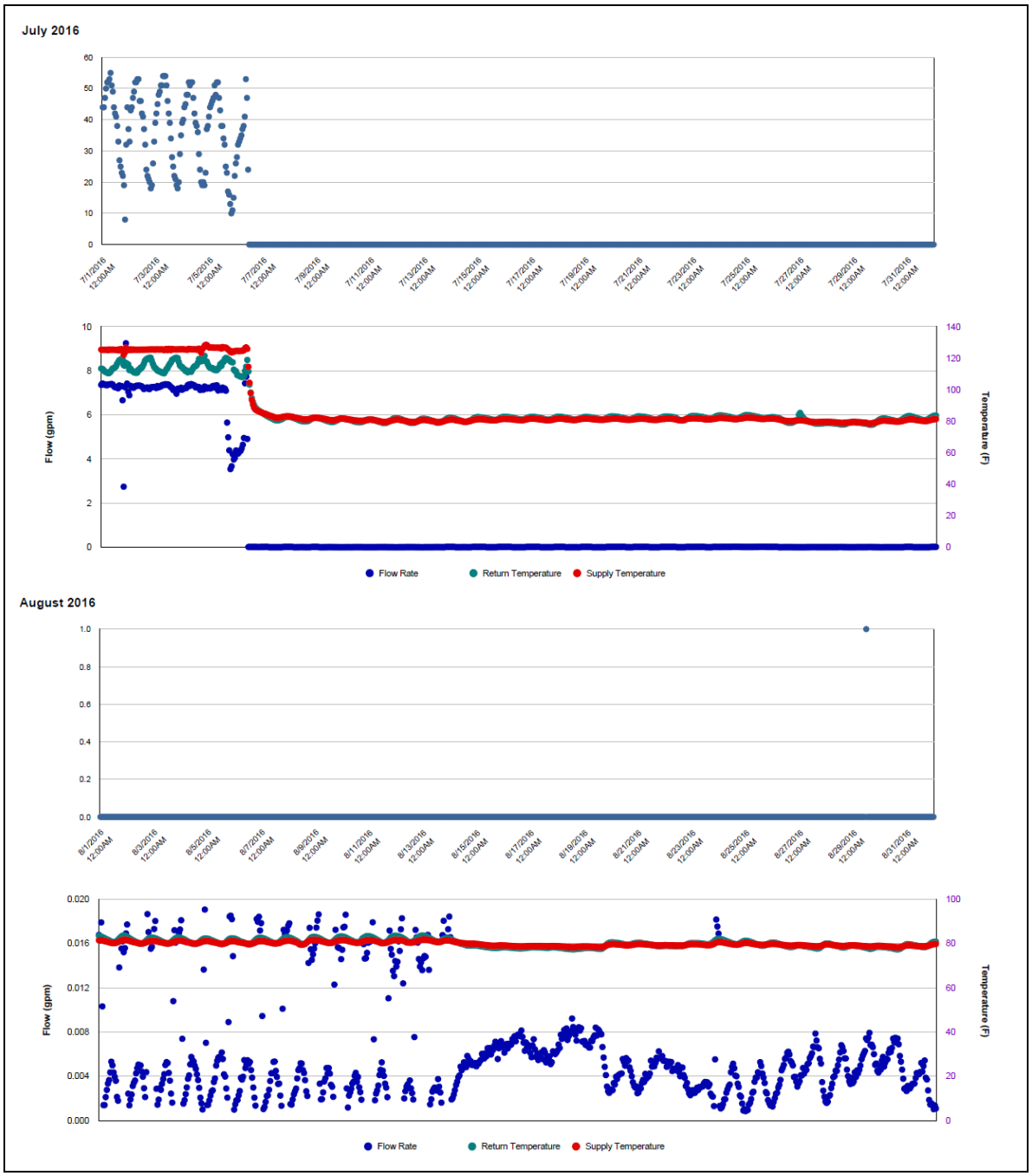
Explanatory Figure: 13 months energy balance plot with original data.



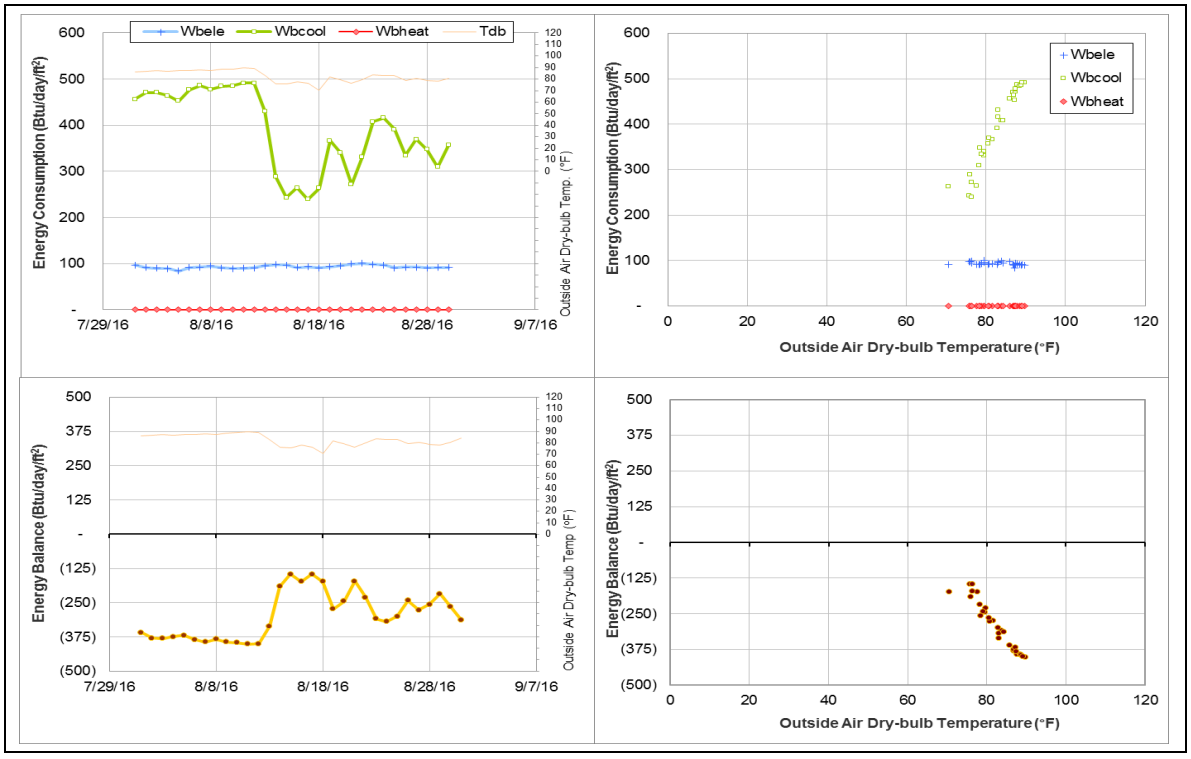
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow, and supply/return temperatures from utilities office. (August 2016)



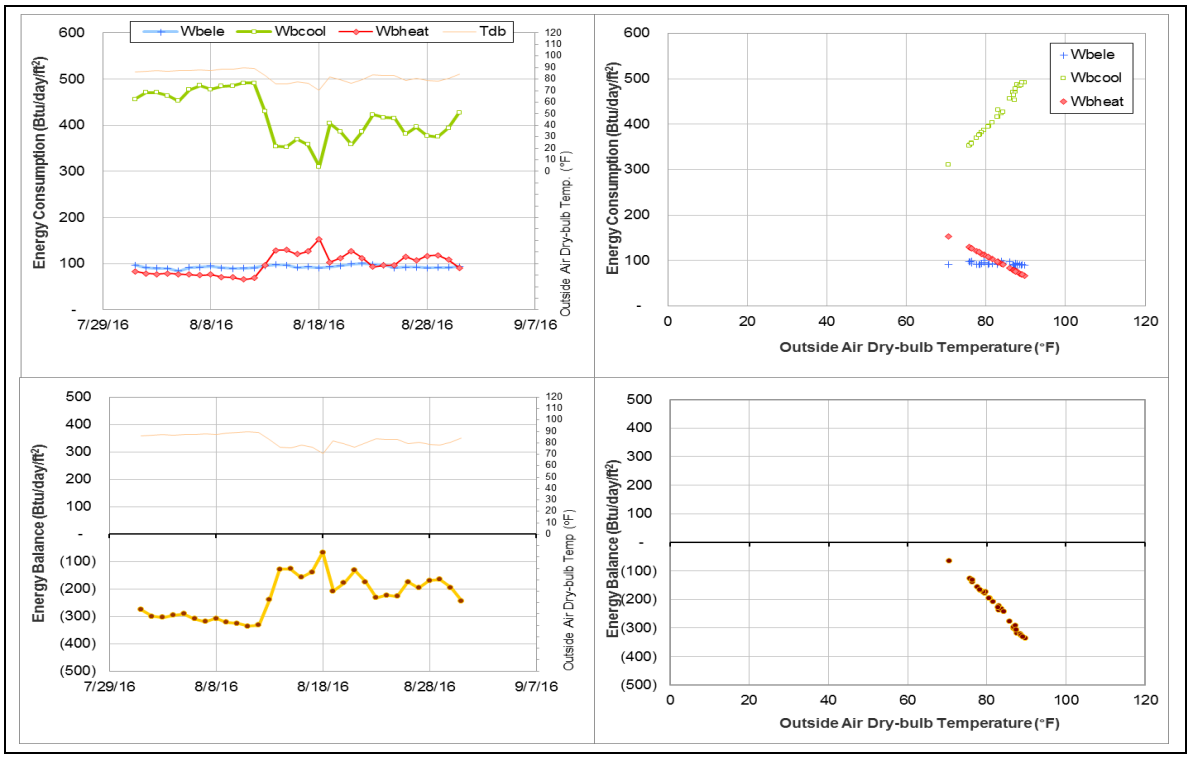
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (top: July 2016, bottom: August 2016)



Energy balance plot using the original data for the month of analysis.



Energy balance plot using the estimated data for the month of analysis



Computing Services Center (TAMU Bldg #516)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	005259	15	8/2/2016 – 8/16/2016	Model

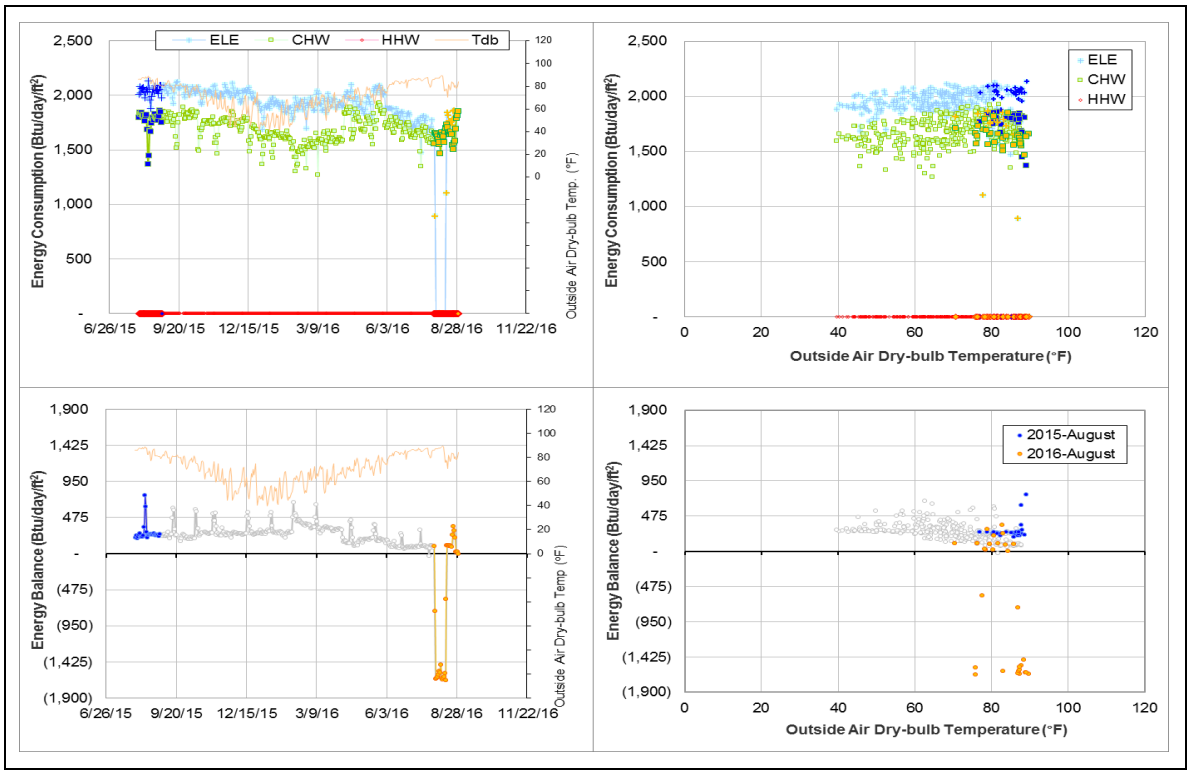
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	Electric consumption suddenly drops to near zero.	8/2/2016 – 8/16/2016

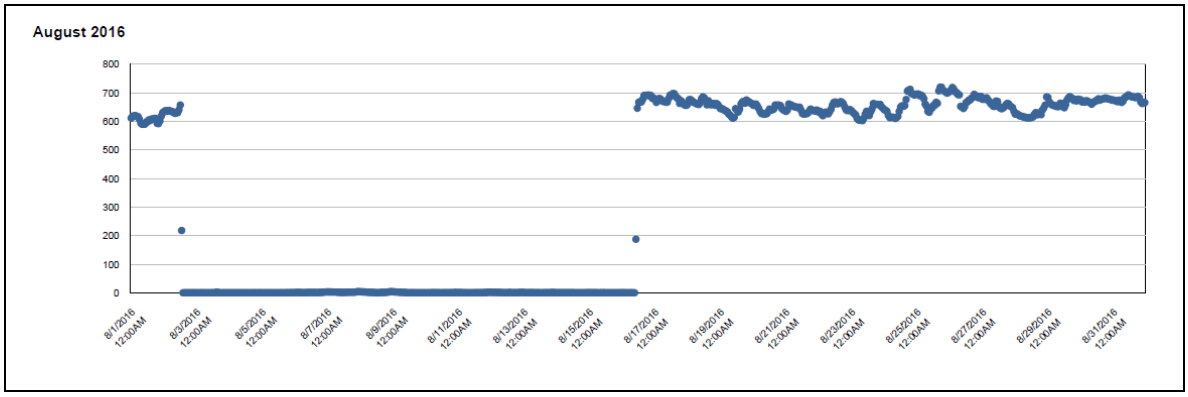
Quantitative descriptions and comments

The electric meter #005259 shows a drop in energy consumption to near zero values for the period 8/2/2016 – 8/16/2016. The electricity was estimated by model for this period.

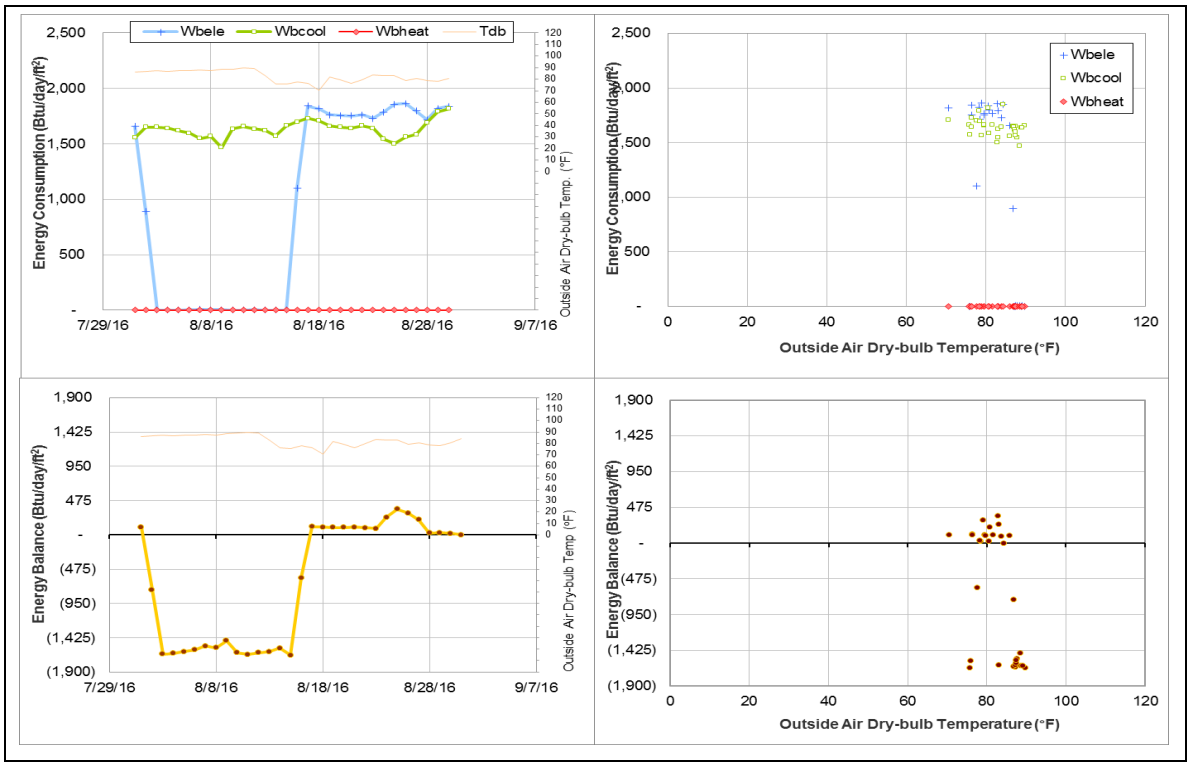
Explanatory Figure: 13 months energy balance plot with original data.



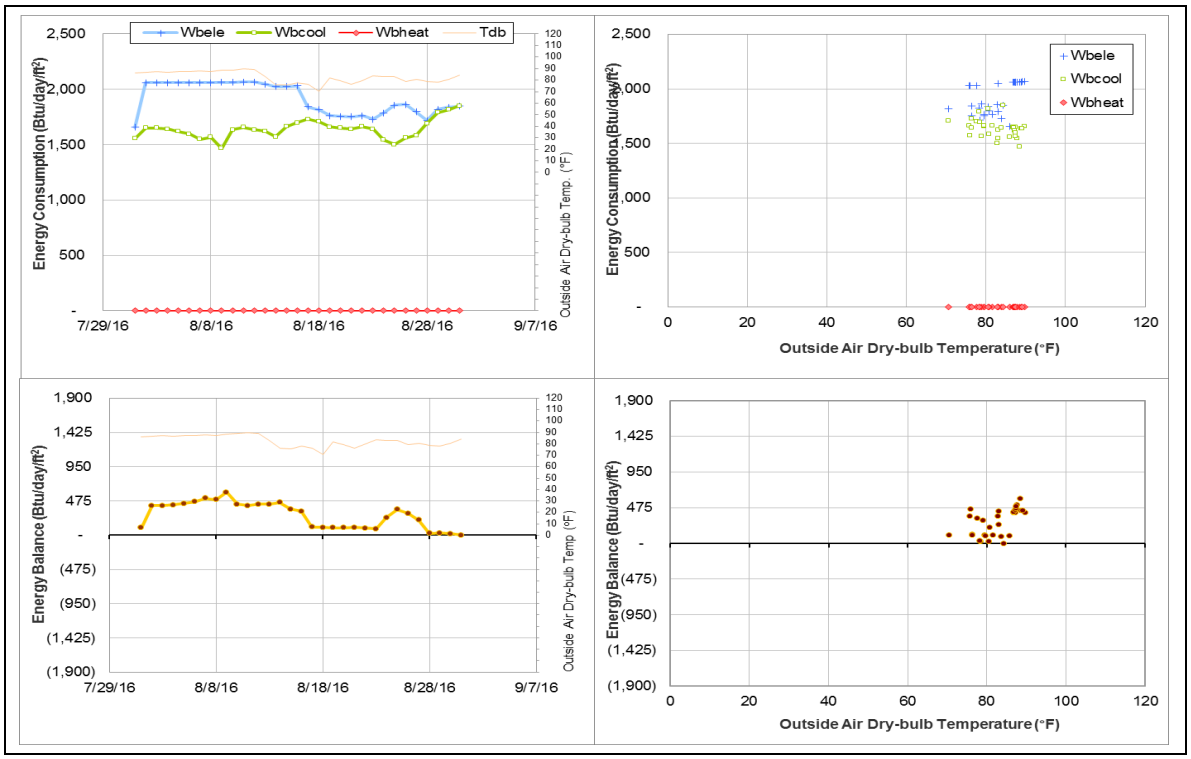
Explanatory Figure: Time series plots of hourly ELE energy consumption from the utilities office. (August 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



Neeley Residence Hall (TAMU Bldg #652)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002147	26	8/1/2016 – 8/26/2016	Model
HHW	002151	26	8/1/2016 – 8/26/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption increased largely.	7/5/2016 – 8/26/2016
HHW	The consumption increased largely.	7/5/2016 – 8/26/2016

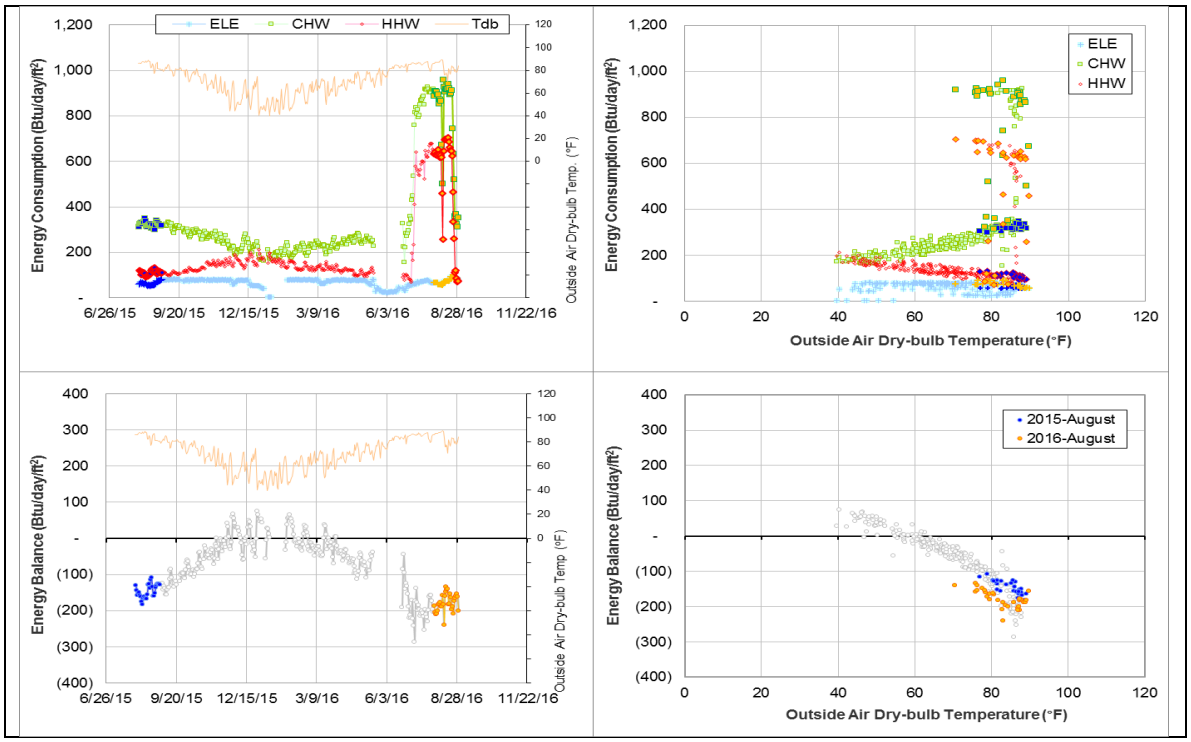
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	002147	7/5/2016 – 8/26/2016	Flow rate	Sudden increase
		7/5/2016 – Ongoing	Delta-T	Sudden increase
HHW	002151	7/5/2016 – 8/26/2016	Flow Rate	Sudden increase
		7/5/2016 – Ongoing	Delta-T	Sudden increase

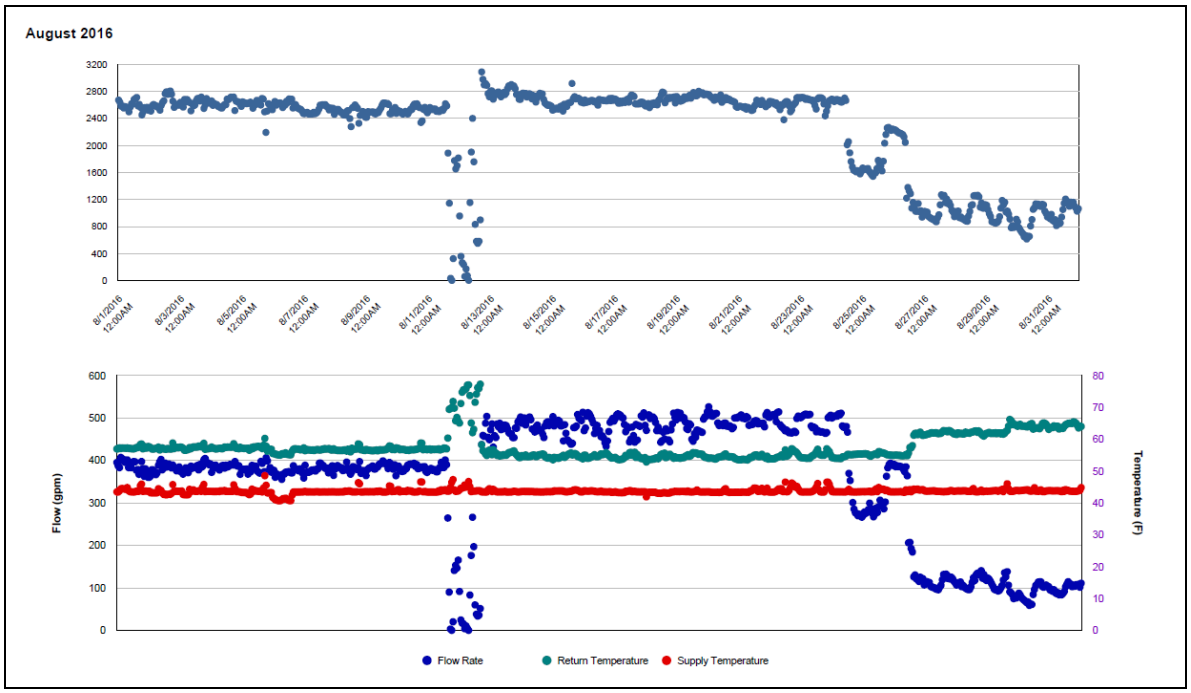
Quantitative descriptions and comments

Starting around 7/5/2016, both the CHW and HHW meters showed a large increase in flow rate and delta-T. The consumption doubled for CHW and HHW during this period. Around 8/26/2016, the flow rates for CHW and HHW both decreased, returning the energy consumption patterns back to the range of the 13-month. Just to note, the delta T remained unchanged for HHW and actually increased for CHW. Since the consumption patterns returned back to the normal range, CHW and HHW were estimated by model only up to 8/26/2016, when the flow rates were high.

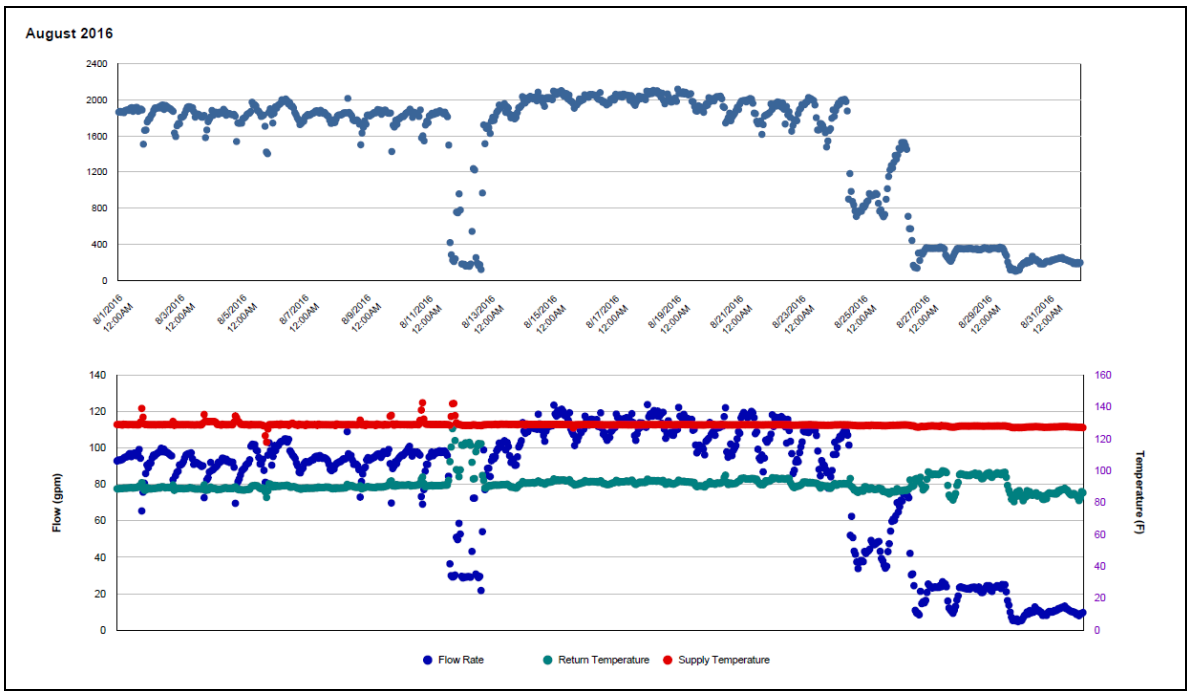
Explanatory Figure: 13 months energy balance plot with original data



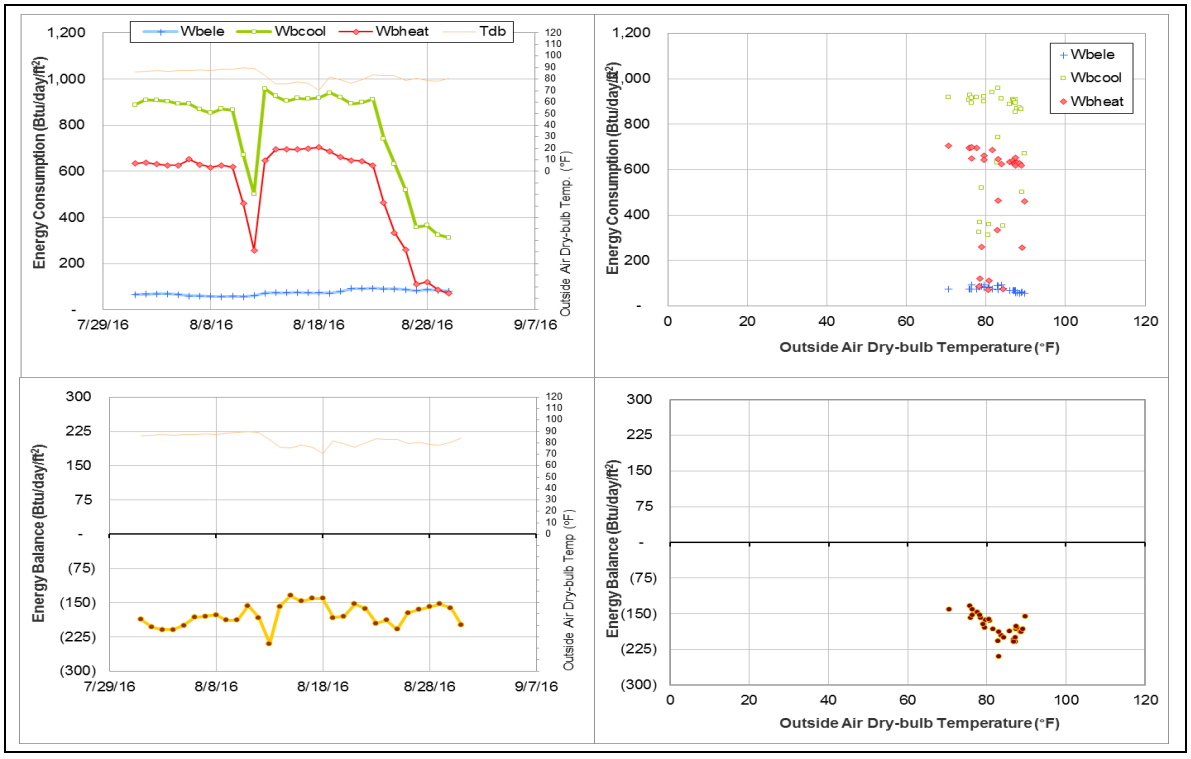
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow, and supply/return temperatures from utilities office. (August 2016)



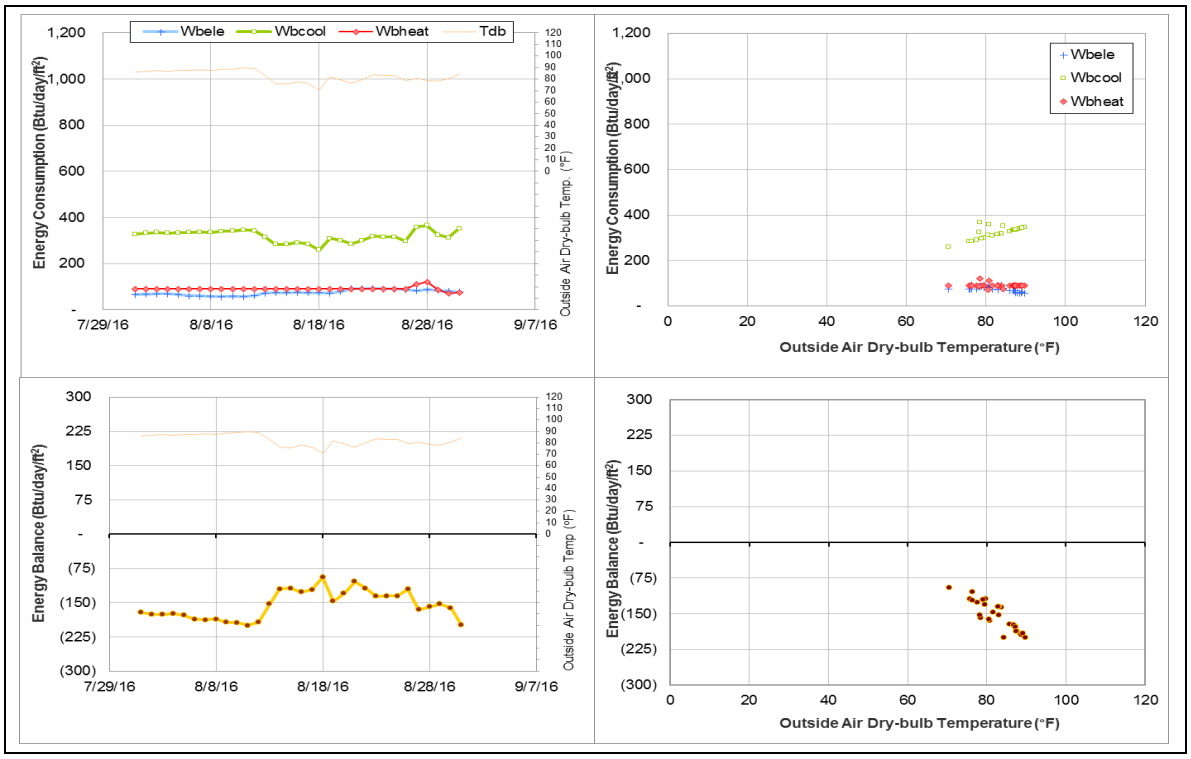
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (August 2016)



Energy balance plot using the original data for the month of analysis.



Energy balance plot using the estimated data for the month of analysis



McNew Laboratory (TAMU Bldg #740)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	005968	31	8/1/2016 – 8/31/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	Decrease in HHW consumption.	5/31/2016– Ongoing

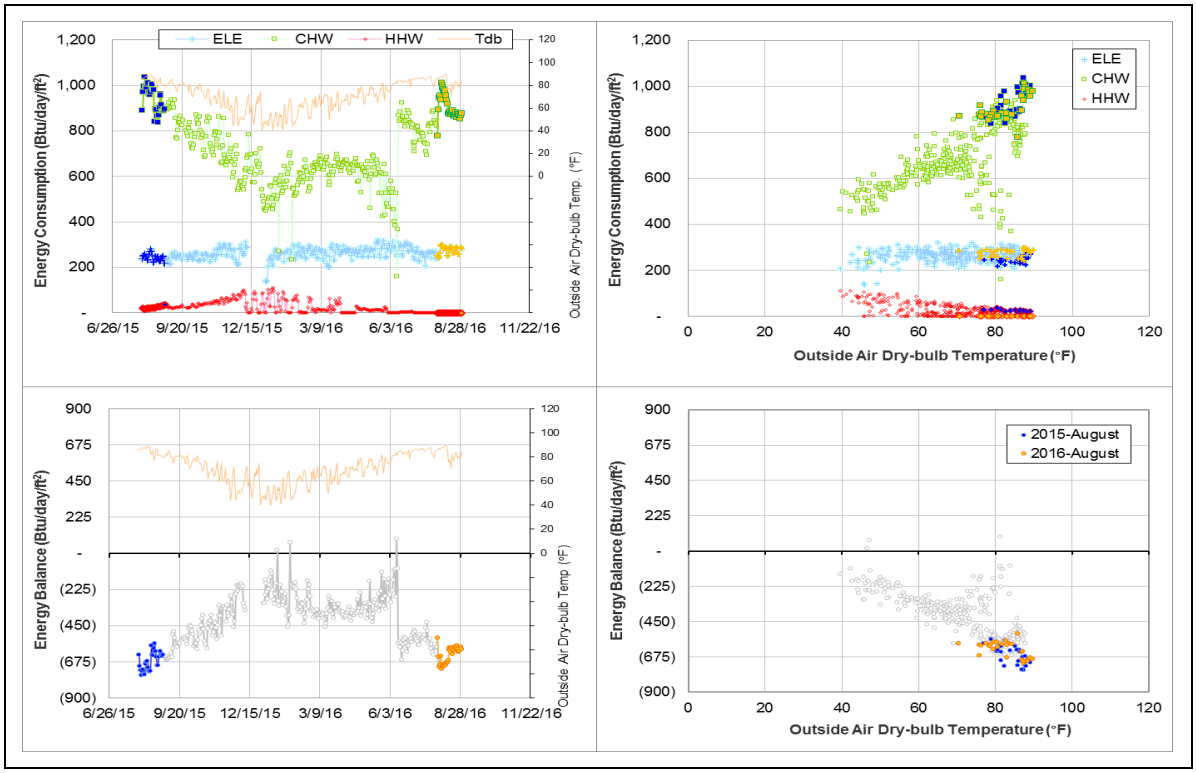
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	005968	5/31/2016 – Ongoing	Flow rate	Decrease to near zero values

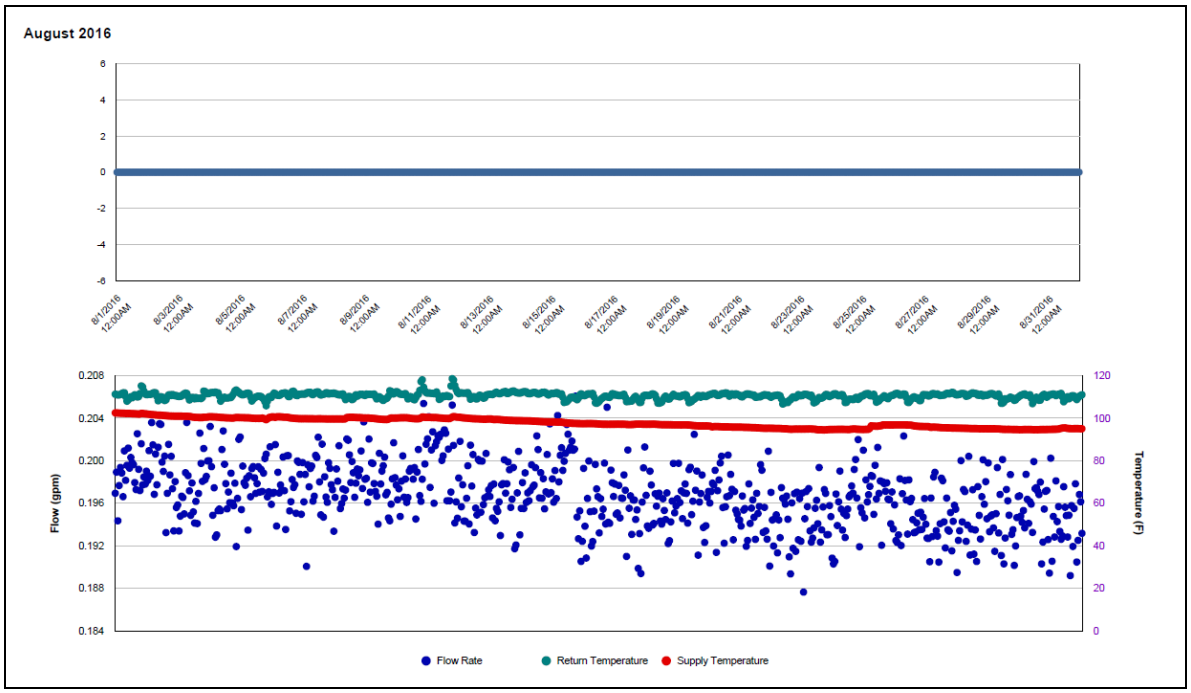
Quantitative descriptions and comments

The HHW flow rate has been zero or near zero since May 2016. While the reduction could be due to not needing HHW during the summer months, there does appear to be HHW consumption when looking back to August of last year. The HHW flow rate ranged 24-28 gpm fairly constantly during August 2016, increasing to the upper end of the range with the start of the fall semester. Based on the indication of last year's consumption, it was decided to estimate the HHW by model for August 2016.

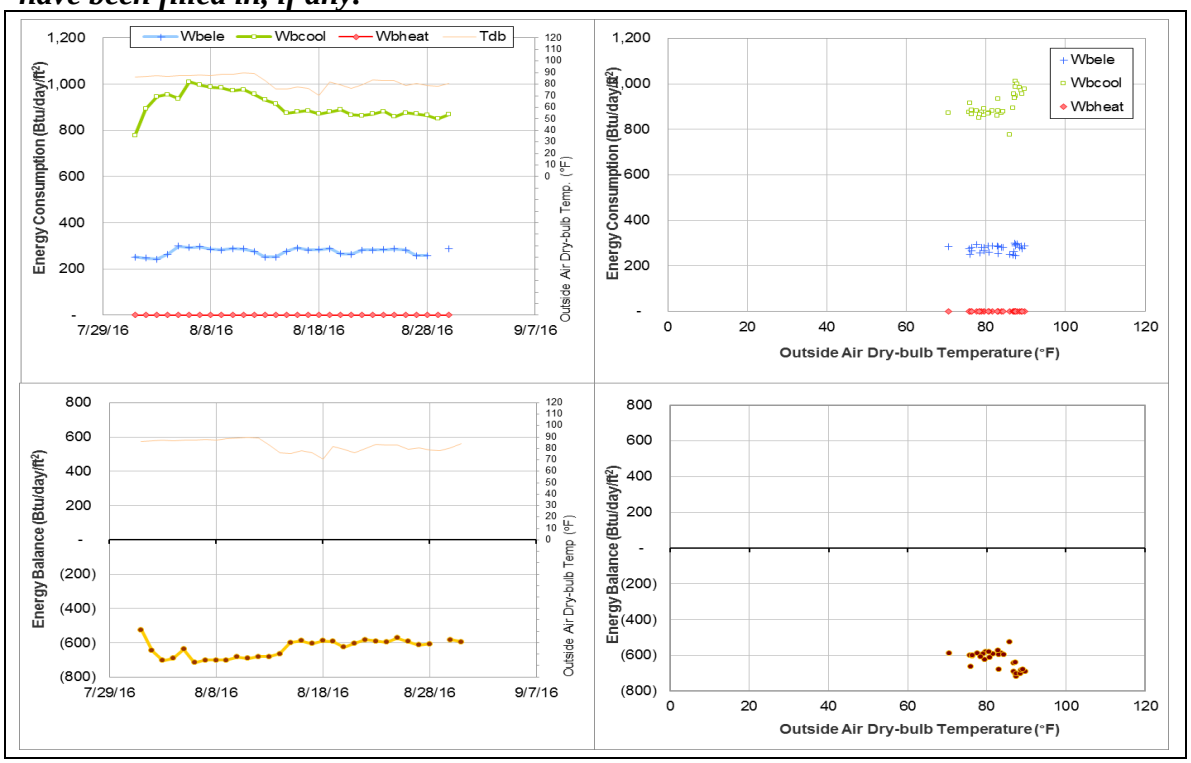
Explanatory Figure: 13 months energy balance plot with original data



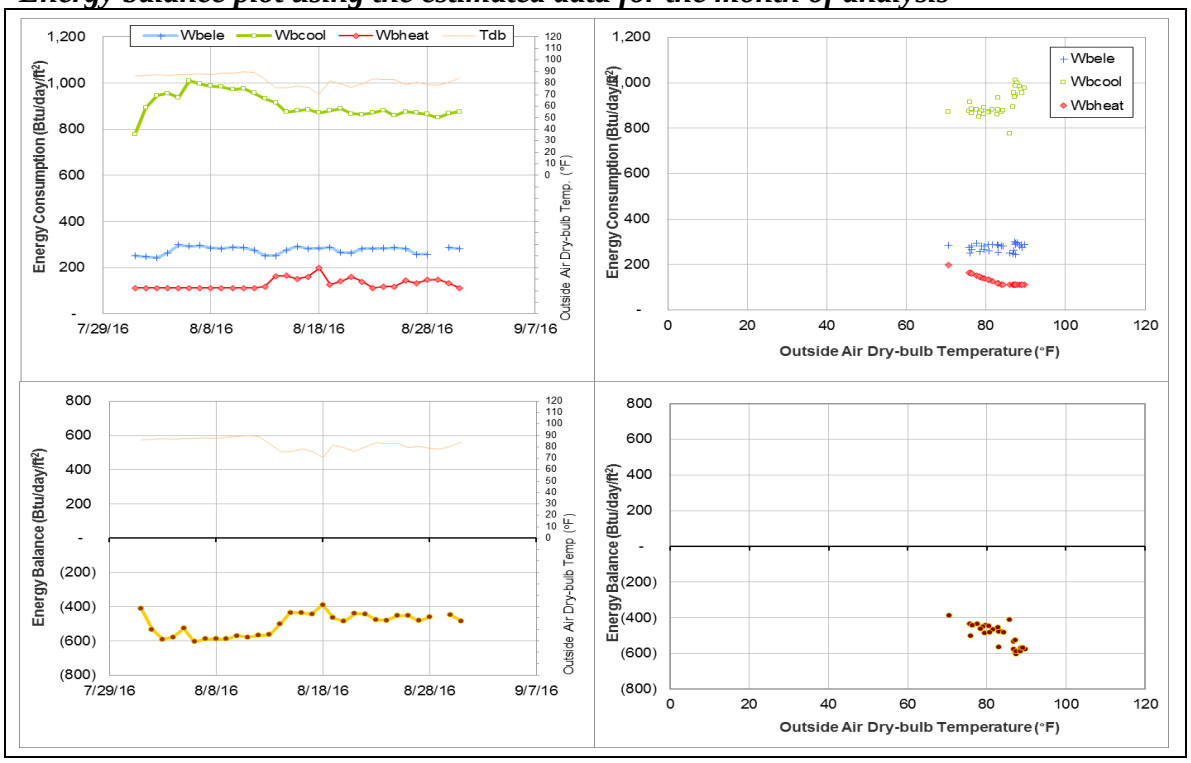
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (August 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



TVMC-Small Animal Building (TAMU Bldg #880)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	005958	31	8/1/2016 – 8/31/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The CHW consumption level has decreased.	4/1/2016 – Ongoing

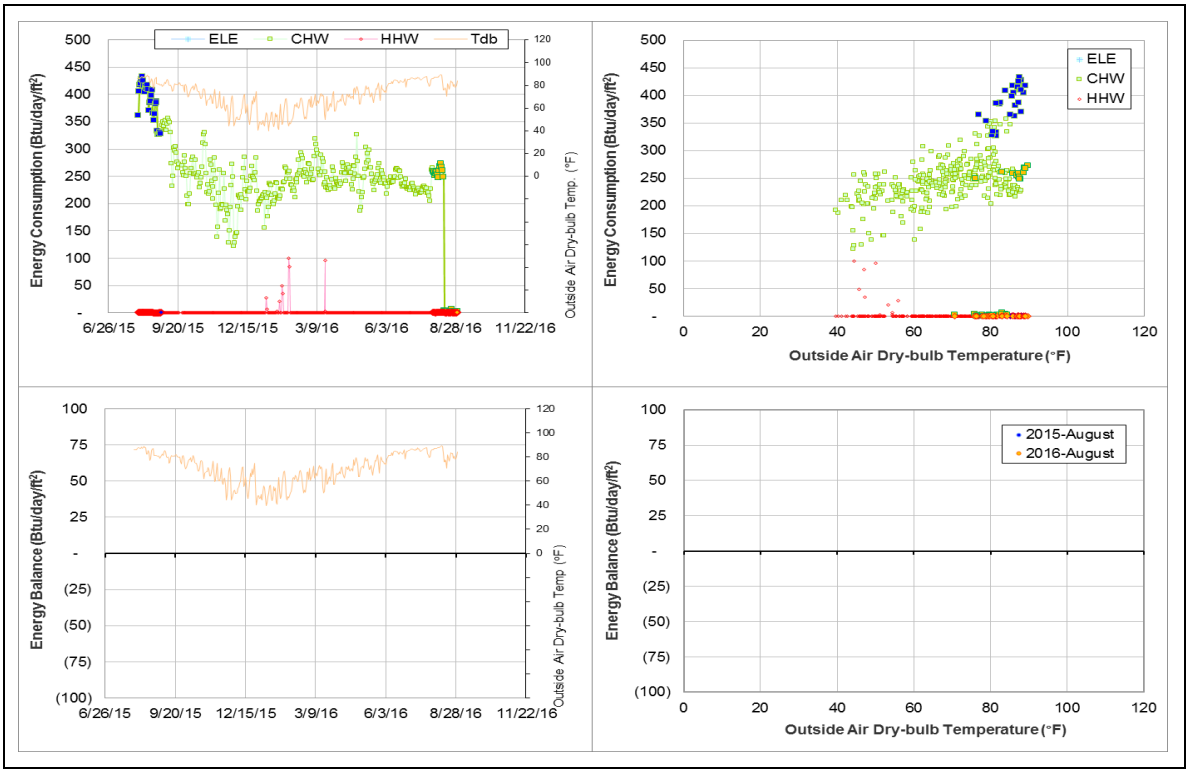
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	005958	4/1/2016 – 8/15/2016	Delta-T	Small
		8/15/2016 – Ongoing	Delta-T	Near zero

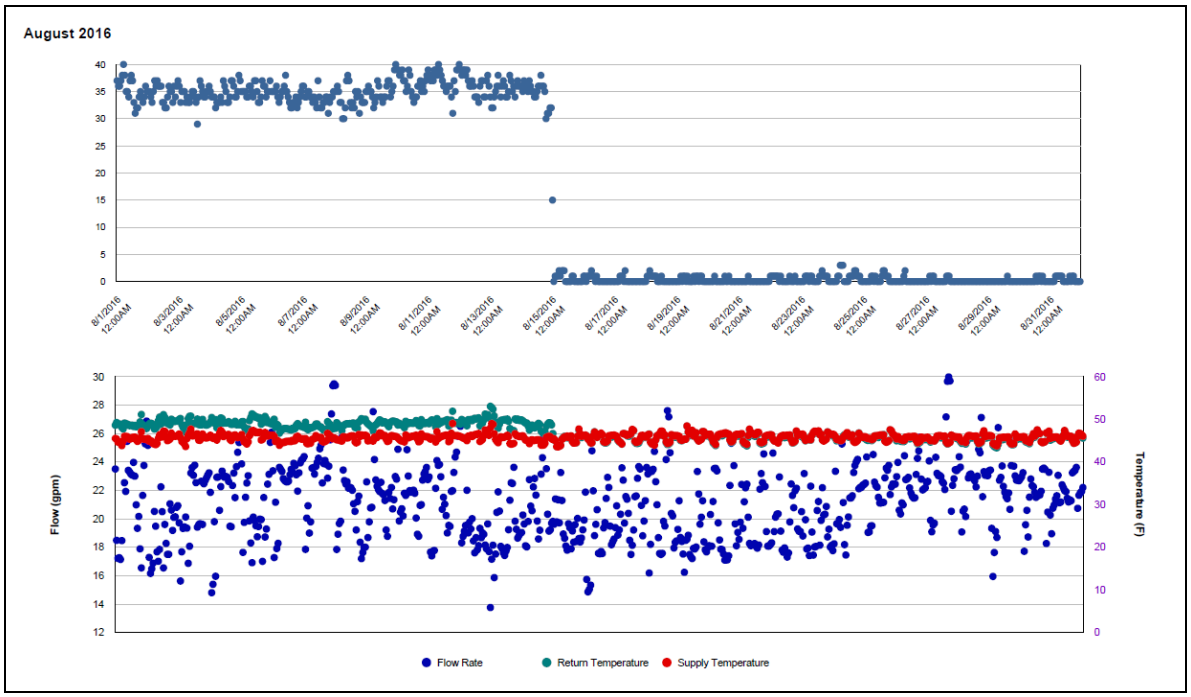
Quantitative descriptions and comments

The monthly CHW consumption has been decreasing since April 2016. The recent energy consumption pattern has flattened out in higher temperatures. When comparing the consumption levels for April through August, they are at the same consumption level as Feb and Mar. It looks like the delta T has not increased since winter, almost half of what it was last summer, and on 8/15/2016 the delta T decreased again but to near zero values. The CHW for August has been estimated by model.

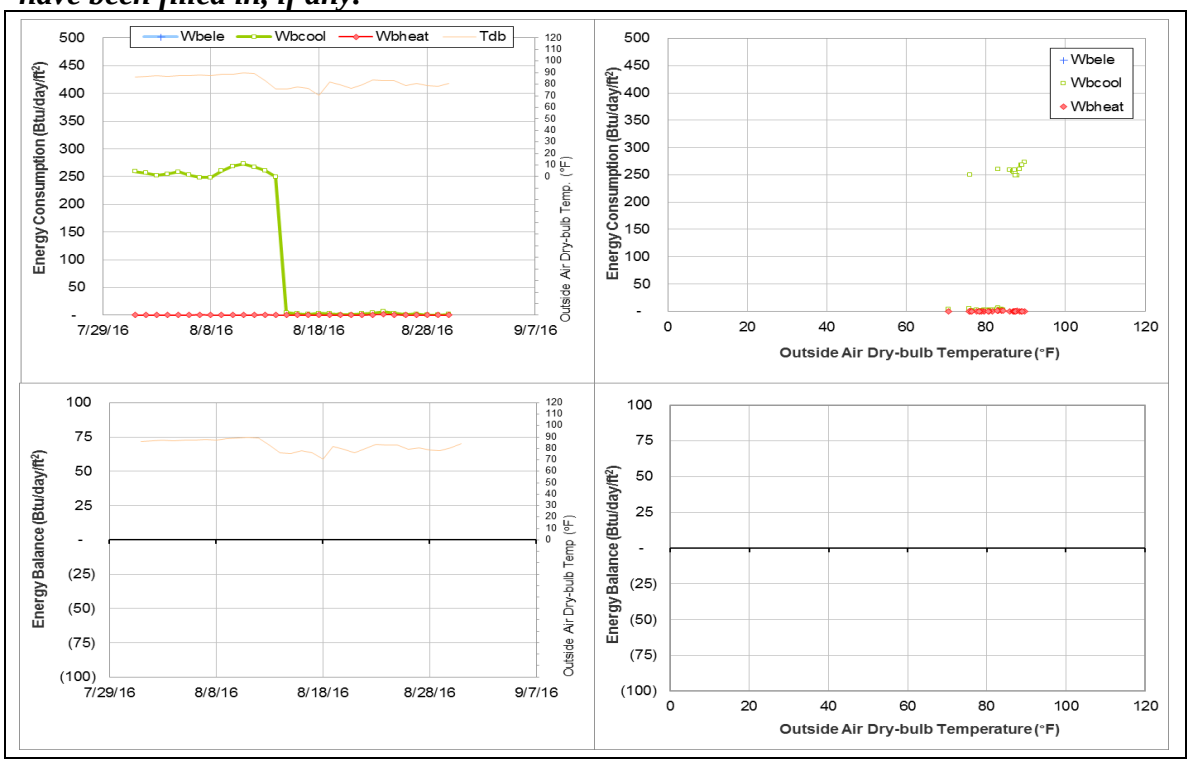
Explanatory Figure: 13 months energy balance plot with original data



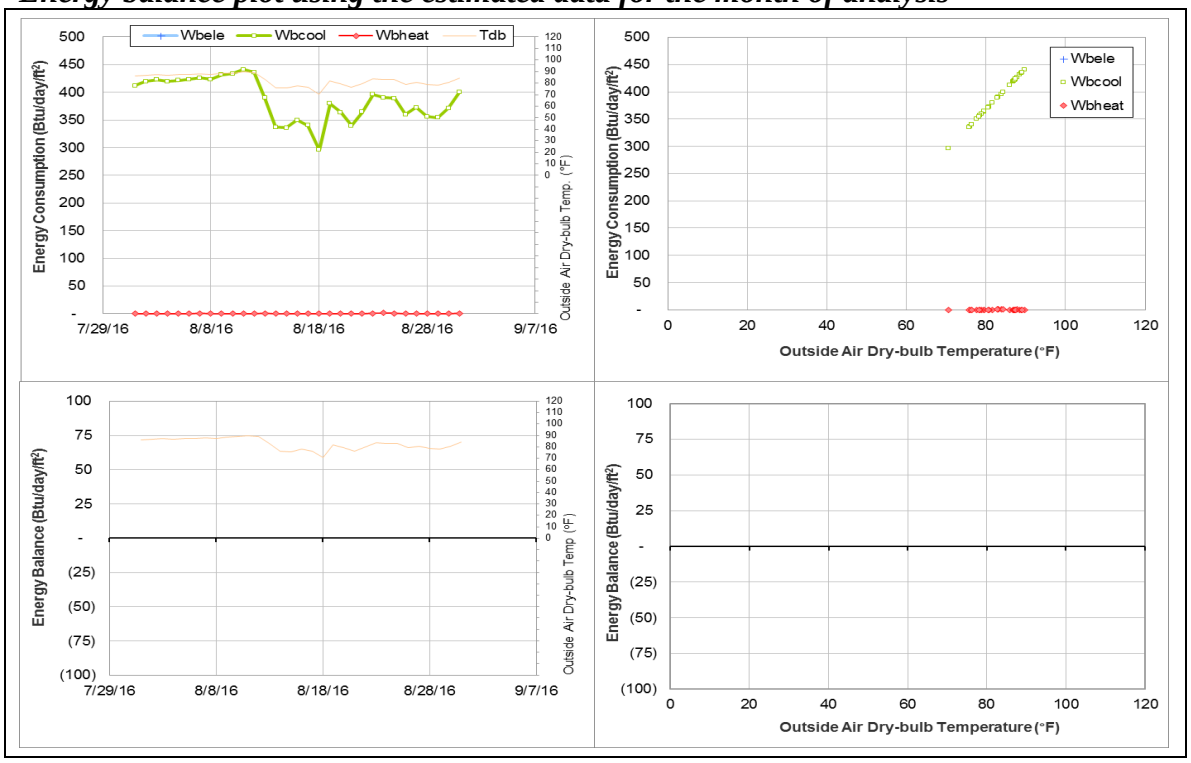
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow rate, and supply and return temperatures from utilities office. (August 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



Buzbee Leadership Learning Center (TAMU Bldg #1402)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	007725	29	8/3/2016 – 8/31/2016	Model
HHW	007726	12	8/1/2016 – 8/12/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption dropped for a short period.	8/3/2016 – 8/5/2016
	The consumption level is higher than the level during the past year.	8/5/2016 – ongoing
HHW	The consumption dropped for a short period.	3/10/2016 – ongoing

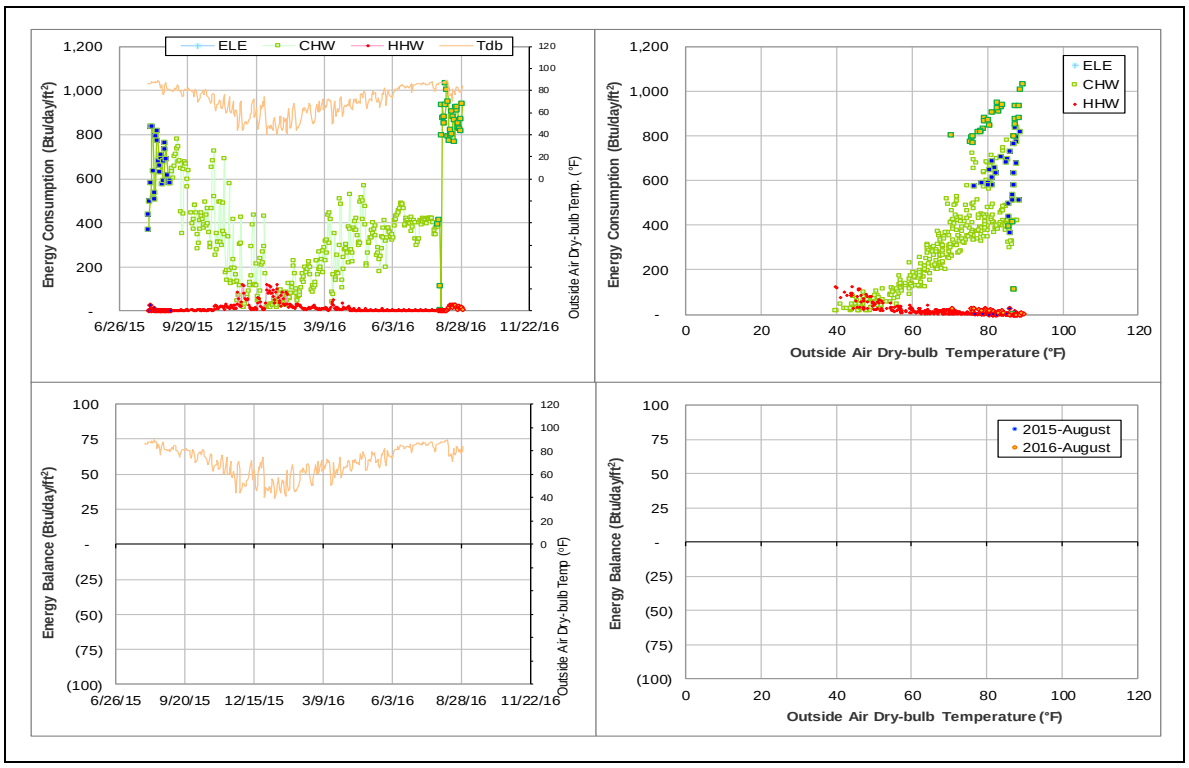
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	007725	8/3/2016 – 8/5/2016	Flow rate	Zero
		8/5/2016 – ongoing	Flow rate	Increased
HHW	007725	3/10/2016 – 4/11/2016	Flow rate	Increased
		4/12/2016 – 8/12/2016	Flow rate	Zero
		8/12/2016 – ongoing	Flow rate	Increased

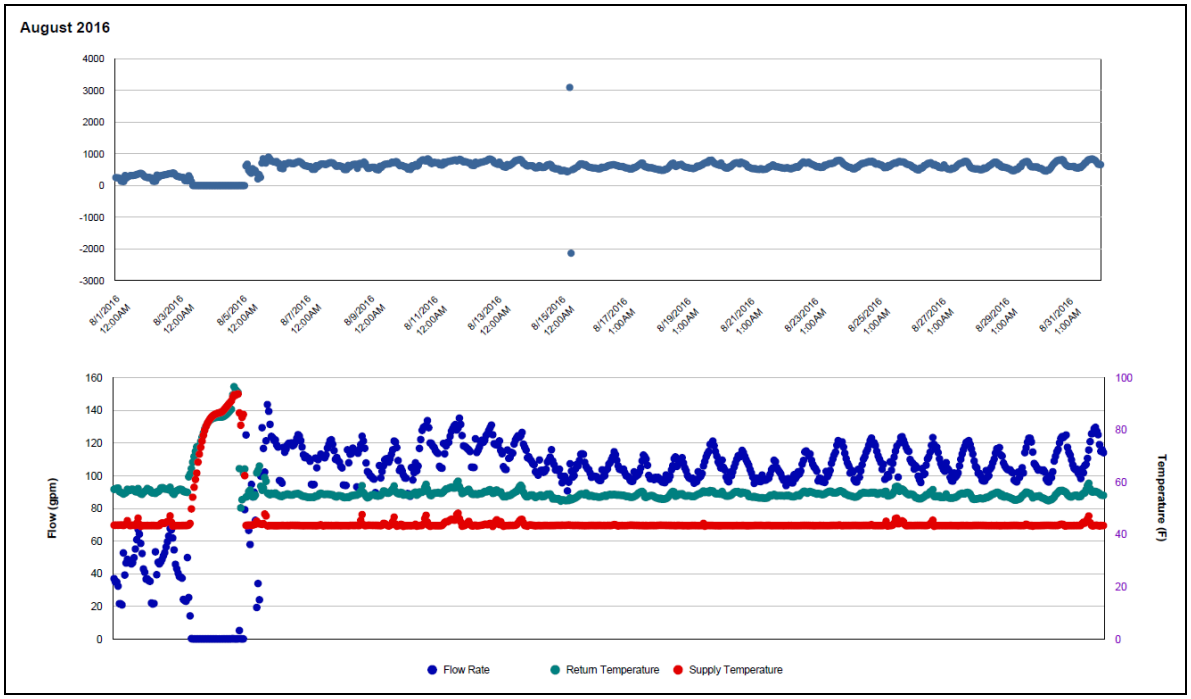
Quantitative descriptions and comments

CHW had a short period of shut down during 8/3 – 8/5/2016 and became 200 Btu/day-sf higher than last year. A model is used to estimate CHW consumption during 8/5 – 8/31/2016. HHW started to have near zero consumption starting 3/10/2016, and the flow is solid zero during 4/12 – 8/12/2016. A model is used to estimate HHW consumption during the solid zero period.

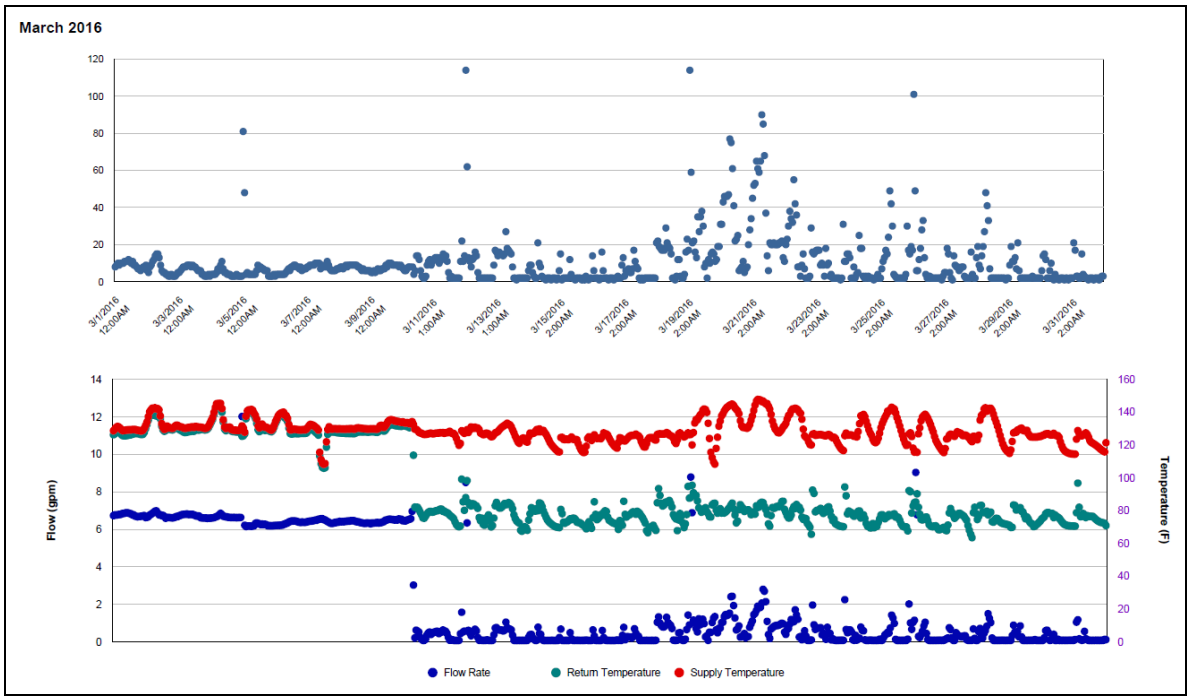
Explanatory Figure: 13 months energy balance plot with original data



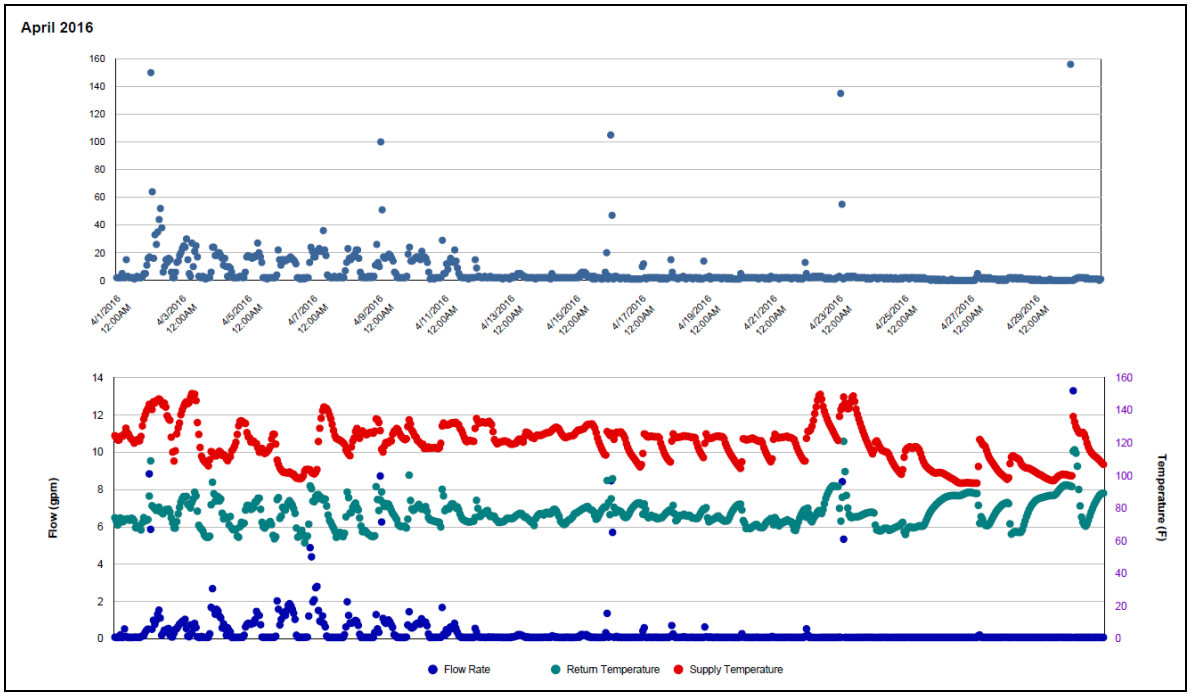
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during August 2016)



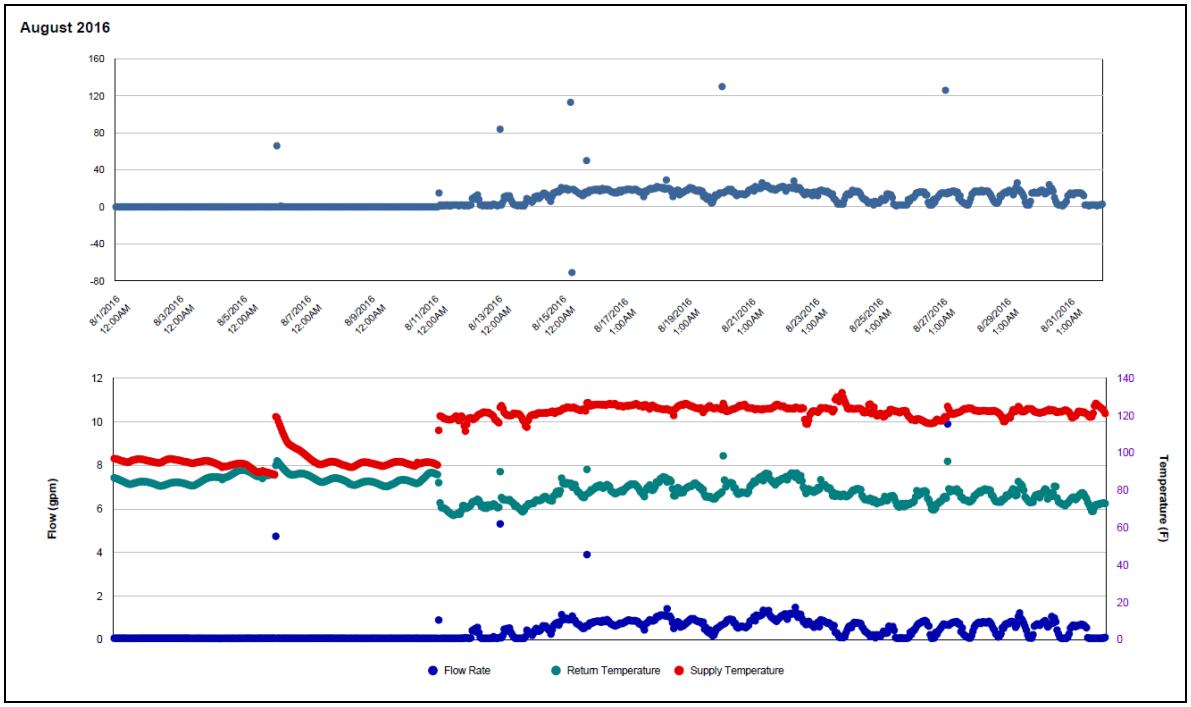
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during March 2016)



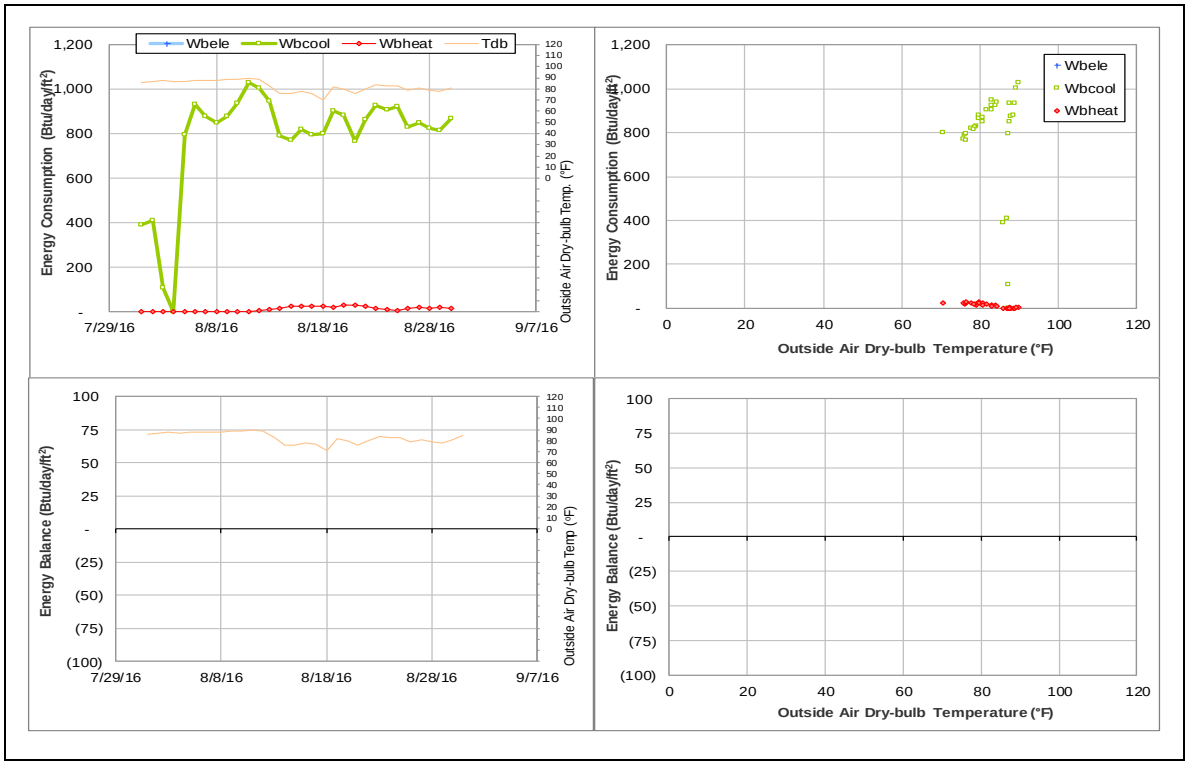
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during April 2016)



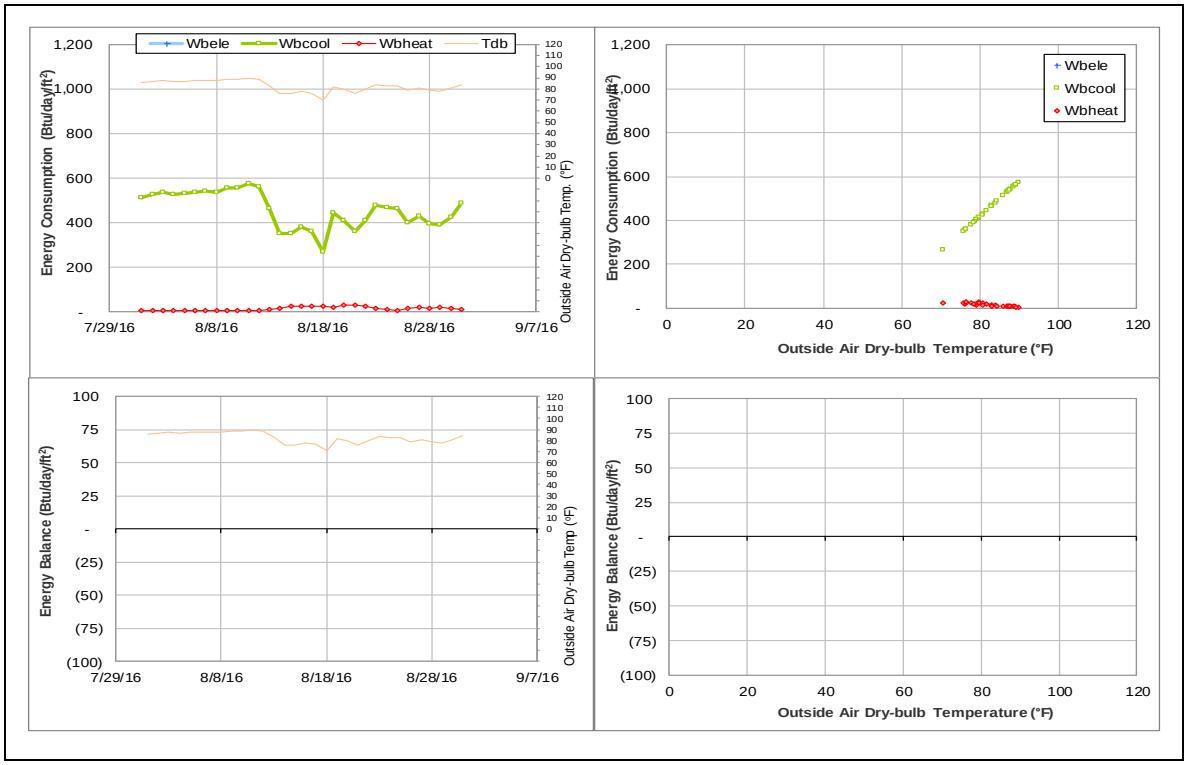
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during August 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Southern Crop Improvement Greenhouse (TAMU Bldg #1512)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	005931	17	8/15/2016 – 8/31/2016	Model

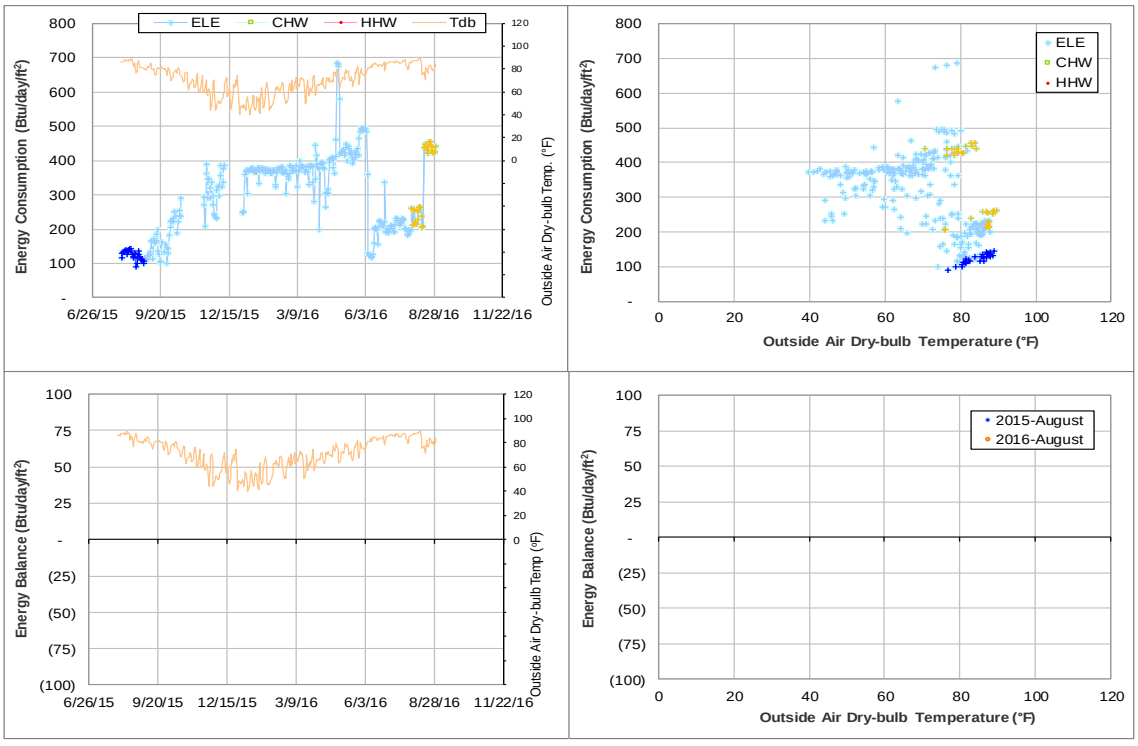
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The consumption decreased.	7/22/2015 – 10/3/2015
	The consumption increased.	11/13/2015 – 6/6/2016 8/15/2016 - ongoing

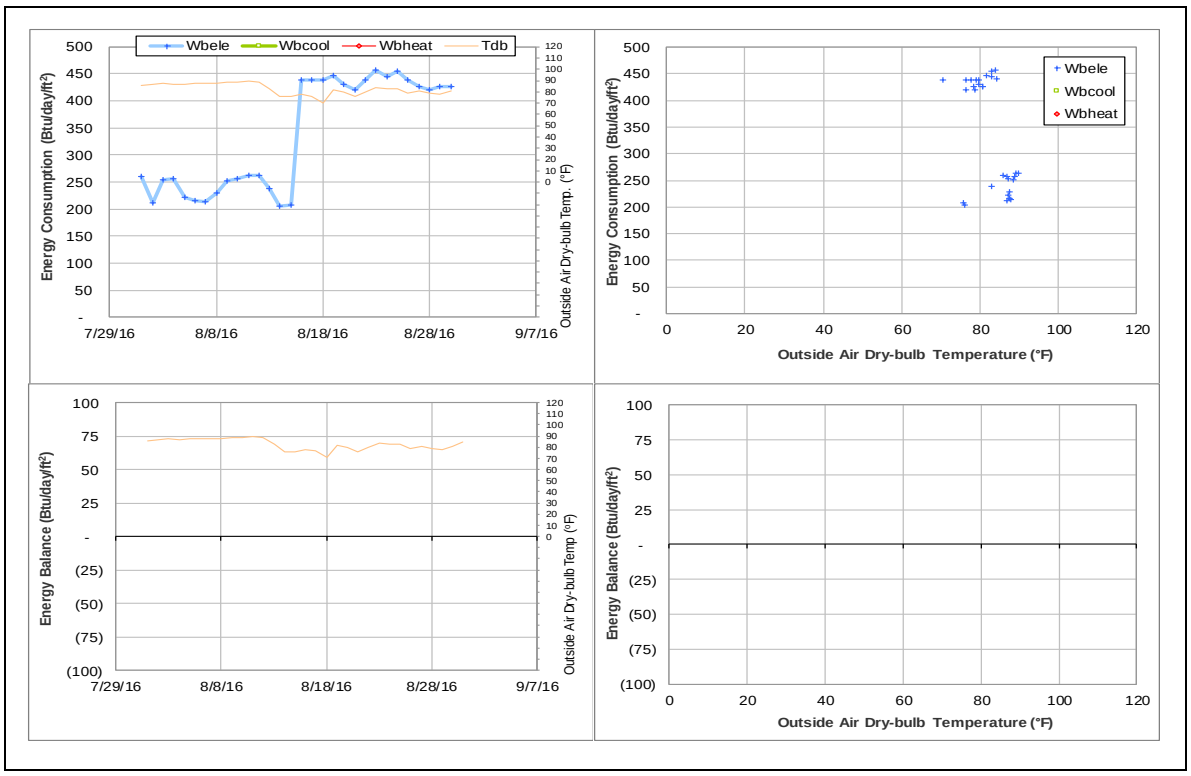
Quantitative descriptions and comments

The electricity consumption level changed frequently since July 2015. The increased consumption after 8/15/2015 was estimated by a model based on the data during 7/1/2014 – 6/30/2015.

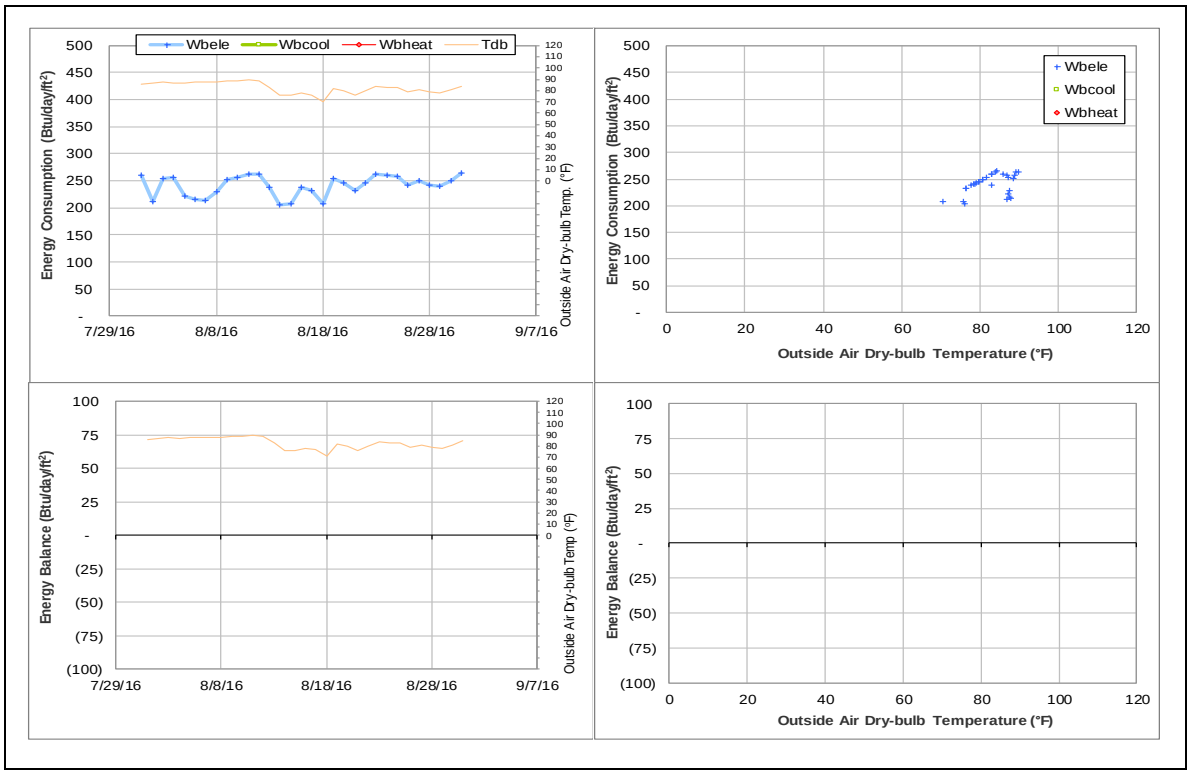
Explanatory Figure: 13 months energy balance plot with original data



Energy balance plot using the original data for the month of analysis.



Energy balance plot using the estimated data for the month of analysis



TX School of Rural Public Health (TAMU Bldg # 1518, 1519, 1520)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	005274	31	8/1/2016 – 8/31/2016	Switch with 005275
ELE	005275	31	8/1/2016 – 8/31/2016	Switch with 005274

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE (005274)	The consumption level increased largely.	8/14/2015 - ongoing
ELE (005275)	The consumption level decreased largely.	8/14/2015 - ongoing

Comments

ELE meter (ID# 005274) is serve for TX School of Rural Public Health B and ELE meter (ID# 005275) is for TX School of Rural Public Health C.

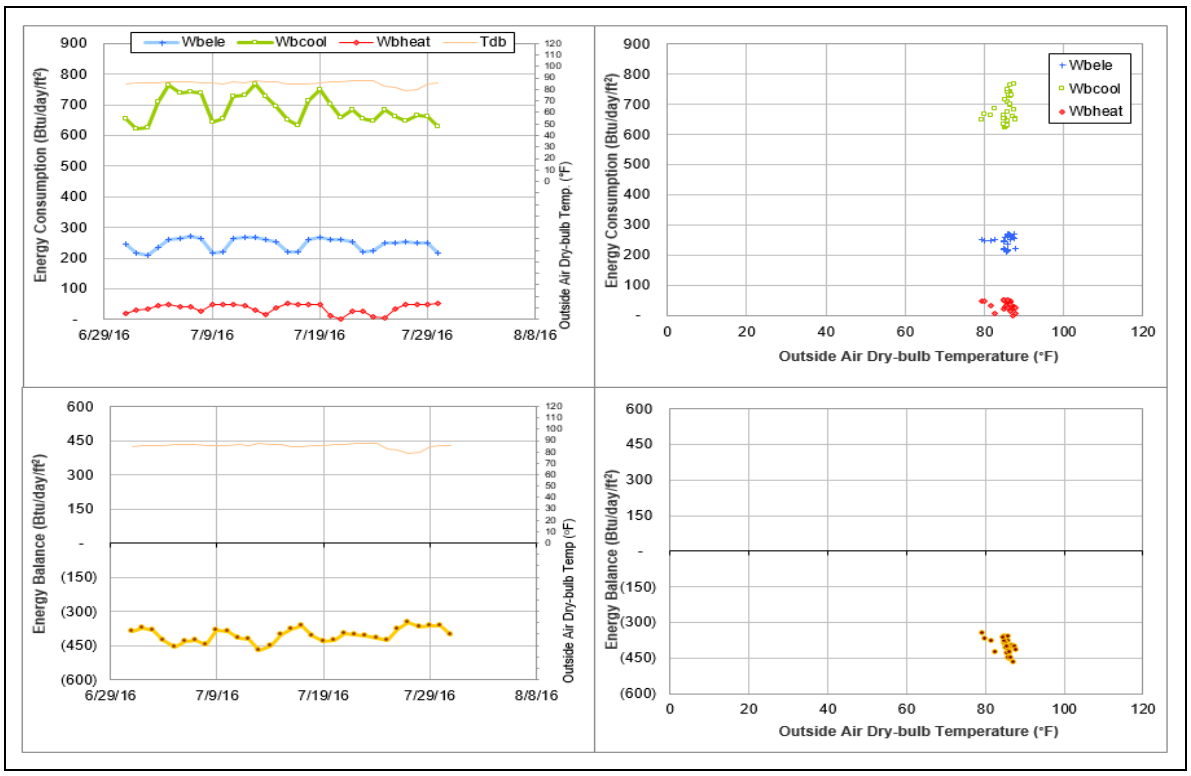
The ELE consumption levels for these two meters have a sudden change on 8/14/2015. The consumption level for meterID 005274 increased by approximate 80 kWh/h (~ 100%) and the consumption level for meter ID 005275 decreased by around 80 kWh/h (~50%).

It was observed that the cumulative reading for these two meters switched on 8/14/2015 12:00 AM. It is suggested to investigate these two meters.

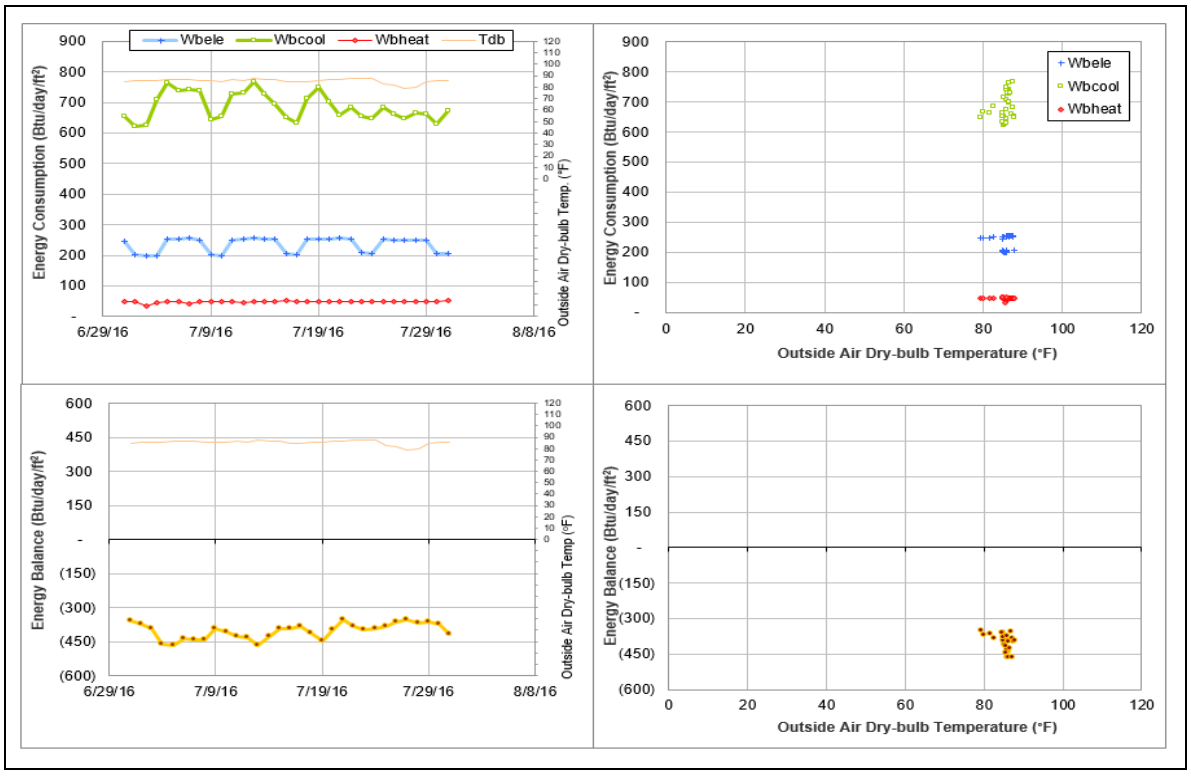
Explanatory Figure: The time series plot of hourly electricity consumption for two ELE meters #005274 and# 005275

Time	Cumulative reading	Hourly Consumption	MeterID		Time	Cumulative reading	Hourly Consumption	MeterID
08/13/2015 12:00:00 PM	2930884.013	84.262	005274		08/13/2015 12:00:00 PM	4741958.002	170.658	005275
08/13/2015 01:00:00 PM	2930968.589	84.576	005274		08/13/2015 01:00:00 PM	4742132.336	174.334	005275
08/13/2015 02:00:00 PM	2931051.959	83.37	005274		08/13/2015 02:00:00 PM	4742303.554	171.218	005275
08/13/2015 03:00:00 PM	2931146.799	94.84	005274		08/13/2015 03:00:00 PM	4742483.683	180.129	005275
08/13/2015 04:00:00 PM	2931240.505	93.706	005274		08/13/2015 04:00:00 PM	4742662.753	179.07	005275
08/13/2015 05:00:00 PM	2931324.169	83.664	005274		08/13/2015 05:00:00 PM	4742832.009	169.256	005275
08/13/2015 06:00:00 PM	2931399.91	75.741	005274		08/13/2015 06:00:00 PM	4742993.53	161.521	005275
08/13/2015 07:00:00 PM	2931472.181	72.271	005274		08/13/2015 07:00:00 PM	4743149.675	156.145	005275
08/13/2015 08:00:00 PM	2931543.838	71.657	005274		08/13/2015 08:00:00 PM	4743305.9	156.225	005275
08/13/2015 09:00:00 PM	2931613.306	69.468	005274		08/13/2015 09:00:00 PM	4743462.097	156.197	005275
08/13/2015 10:00:00 PM	2931672.706	59.4	005274		08/13/2015 10:00:00 PM	4743610.221	148.124	005275
08/13/2015 11:00:00 PM	2931733.072	60.366	005274		08/13/2015 11:00:00 PM	4743745.645	135.424	005275
08/14/2015 12:00:00 AM	4743876.03	130.385	005274		08/14/2015 12:00:00 AM	2931791.19	58.118	005275
08/14/2015 01:00:00 AM	4744008.406	132.376	005274		08/14/2015 01:00:00 AM	2931849.35	58.16	005275
08/14/2015 02:00:00 AM	4744141.74	133.334	005274		08/14/2015 02:00:00 AM	2931908.534	59.184	005275
08/14/2015 03:00:00 AM	4744272.553	130.813	005274		08/14/2015 03:00:00 AM	2931966.686	58.152	005275
08/14/2015 04:00:00 AM	4744404.045	131.492	005274		08/14/2015 04:00:00 AM	2932023.589	56.903	005275
08/14/2015 05:00:00 AM	4744534.38	130.335	005274		08/14/2015 05:00:00 AM	2932080.05	56.461	005275
08/14/2015 06:00:00 AM	4744667.111	132.731	005274		08/14/2015 06:00:00 AM	2932137.05	57	005275
08/14/2015 07:00:00 AM	4744820.038	152.927	005274		08/14/2015 07:00:00 AM	2932232.983	95.933	005275
08/14/2015 08:00:00 AM	4744972.221	152.183	005274		08/14/2015 08:00:00 AM	2932319.162	86.179	005275
08/14/2015 09:00:00 AM	4745134.467	162.246	005274		08/14/2015 09:00:00 AM	2932404.691	85.529	005275
08/14/2015 10:00:00 AM	4745308.905	174.438	005274		08/14/2015 10:00:00 AM	2932489.976	85.285	005275
08/14/2015 11:00:00 AM	4745476.832	167.927	005274		08/14/2015 11:00:00 AM	2932564.419	74.443	005275
08/14/2015 12:00:00 PM	4745634.44	157.608	005274		08/14/2015 12:00:00 PM	2932634.064	69.645	005275
08/14/2015 01:00:00 PM	4745789.345	154.905	005274		08/14/2015 01:00:00 PM	2932704.723	70.659	005275
08/14/2015 02:00:00 PM	4745949.369	160.024	005274		08/14/2015 02:00:00 PM	2932777.373	72.65	005275
08/14/2015 03:00:00 PM	4746110.346	160.977	005274		08/14/2015 03:00:00 PM	2932845.908	68.535	005275
08/14/2015 04:00:00 PM	4746270.903	160.557	005274		08/14/2015 04:00:00 PM	2932920.525	74.617	005275
08/14/2015 05:00:00 PM	4746431.347	160.444	005274		08/14/2015 05:00:00 PM	2932996.835	76.31	005275
08/14/2015 06:00:00 PM	4746586.415	155.068	005274		08/14/2015 06:00:00 PM	2933065.518	68.683	005275
08/14/2015 07:00:00 PM	4746727.476	141.061	005274		08/14/2015 07:00:00 PM	2933127.559	62.041	005275
08/14/2015 08:00:00 PM	4746864.372	136.896	005274		08/14/2015 08:00:00 PM	2933195.384	67.825	005275
08/14/2015 09:00:00 PM	4747004.372	140	005274		08/14/2015 09:00:00 PM	2933263.632	68.248	005275
08/14/2015 10:00:00 PM	4747137.886	133.514	005274		08/14/2015 10:00:00 PM	2933323.26	59.628	005275
08/14/2015 11:00:00 PM	4747269.569	131.683	005274		08/14/2015 11:00:00 PM	2933382.3	59.04	005275

Energy balance plot using the original data for the month of analysis.



Energy balance plot using the estimated data for the month of analysis



Reed Arena (TAMU Bldg #1554)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	006243	31	8/1/2016 – 8/31/2016	Model

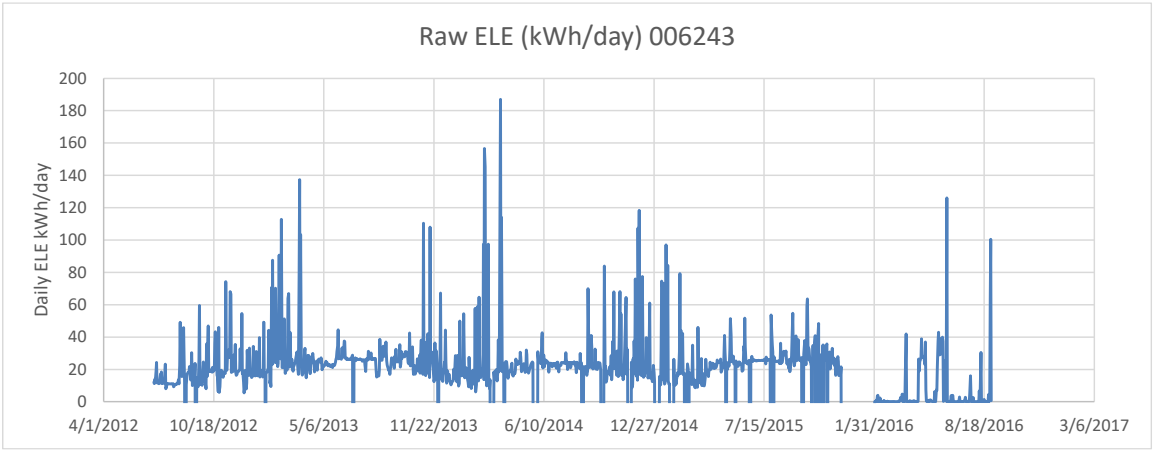
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The consumption decreased largely.	2/1/2016-3/28/2016 3/30/2016-4/19/2016 5/4/2016-5/24/2016 6/5/2016-8/31/2016

Quantitative descriptions and comments

There are three ELE meters for this building. The consumption for one of them (ELE MID 006243) only counts for around 0.3% of total ELE consumption for this building. The consumption for ELE MID 006243 decreased to nearly zero since 2/1/2016. It increased back on 3/28/2016, but decreased to nearly zero frequently for most time after April 2016. However, it doesn't affect the energy balance. The problematic consumption was estimated by a model based on the data during 1/1/2015 – 12/31/2015.

Explanatory Figure: Time series plot for ELE meter 006243



Cox-McFerrin Center for Aggie Basketball (TAMU Bldg #1558)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	007575	31	8/1/2016 – 8/31/2016	Model

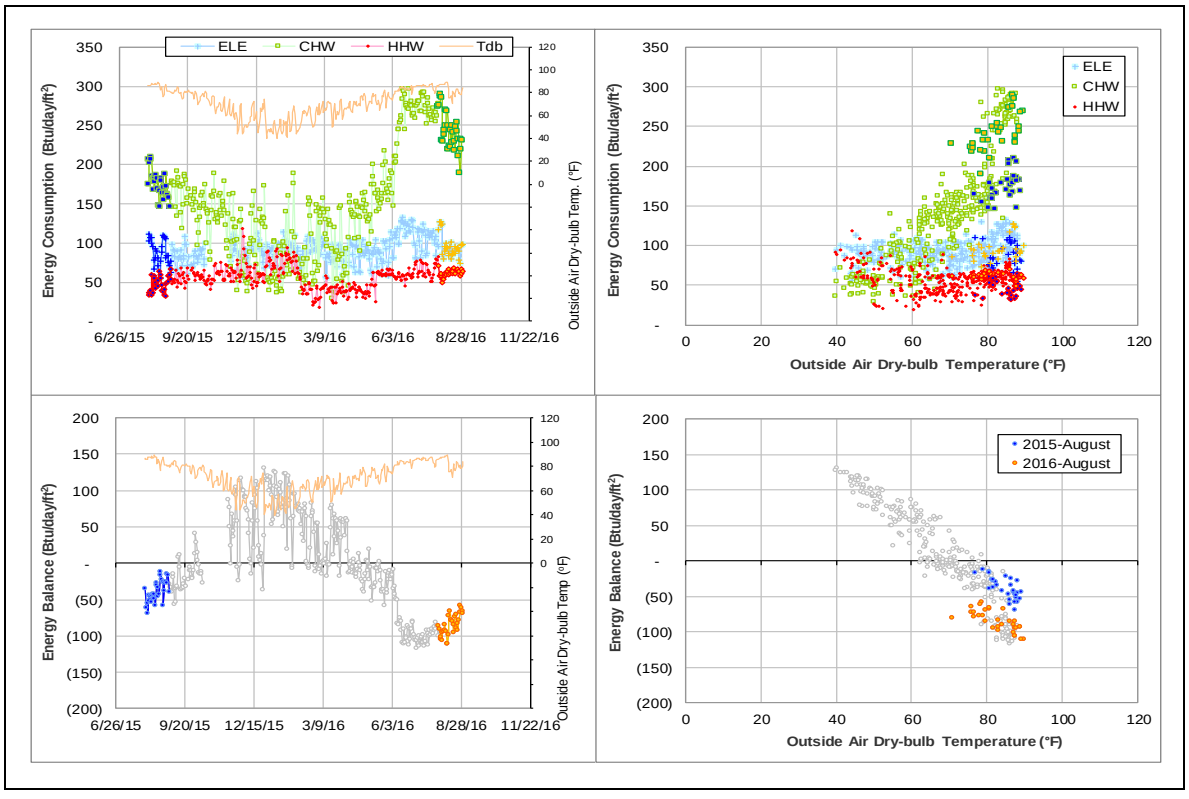
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption increased and the consumption level is approximately 100 Btu/day/ft^2 higher than the same month of last year.	6/10/2016 – ongoing

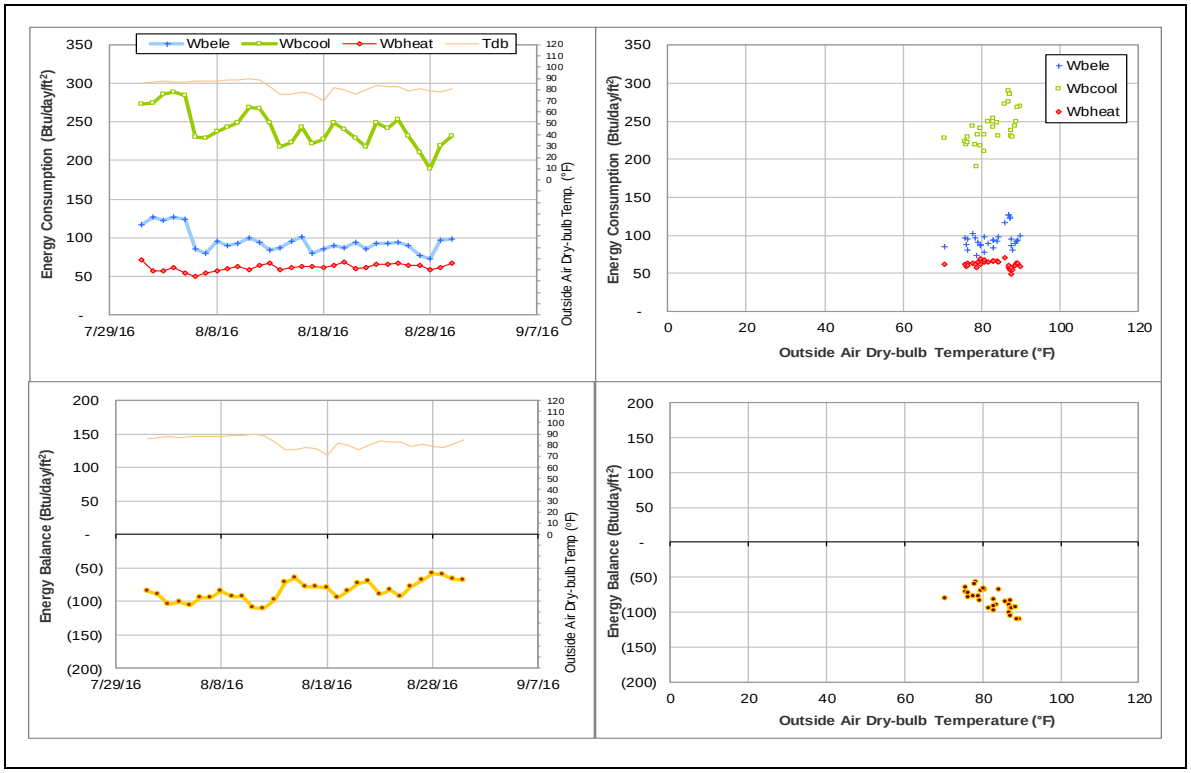
Quantitative descriptions and comments

Starting 6/10/2016 the CHW consumption of this building has increased by approximately 100 Btu/day/ft^2. The consumption was estimated by a model.

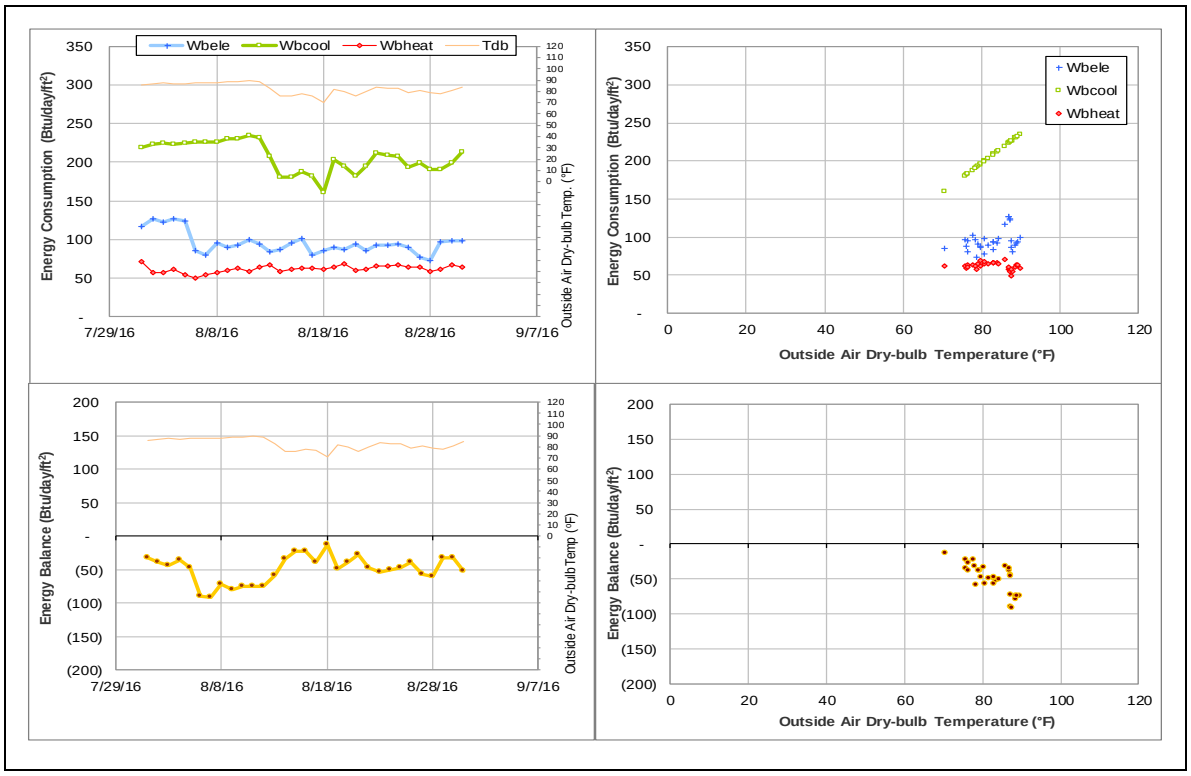
Explanatory Figure: 13 months energy balance plot with original data



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



Student Recreation Center (TAMU Bldg #1560)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	002937	31	8/1/2016 – 8/31/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	The consumption level is higher than that of last year.	8/1/2016 – 8/7/2016 8/19/2016 - Ongoing
	The consumption decreased to zero	8/8/2016 – 8/18/2016

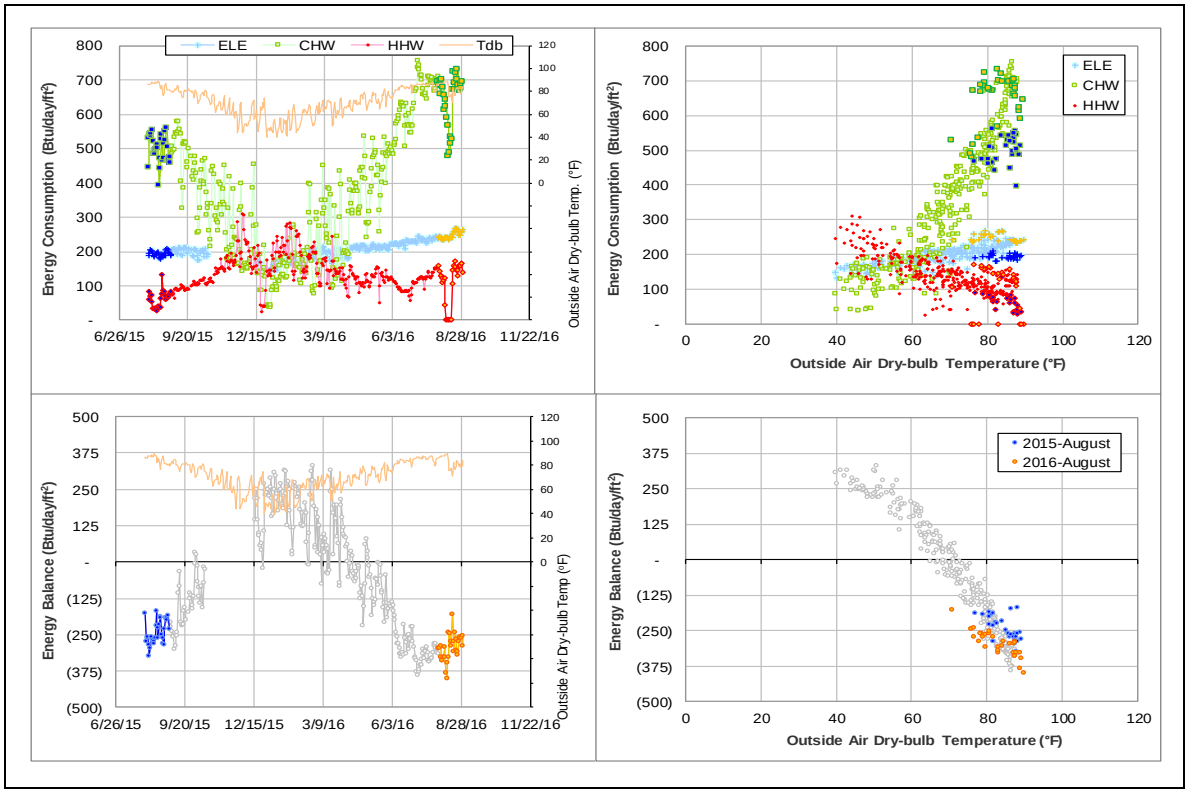
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	002937	8/8/2016 – 8/18/2016	Flow rate	High
		8/1/2016 – 8/7/2016 8/19/2016 - Ongoing	Flow rate	Decreased to zero

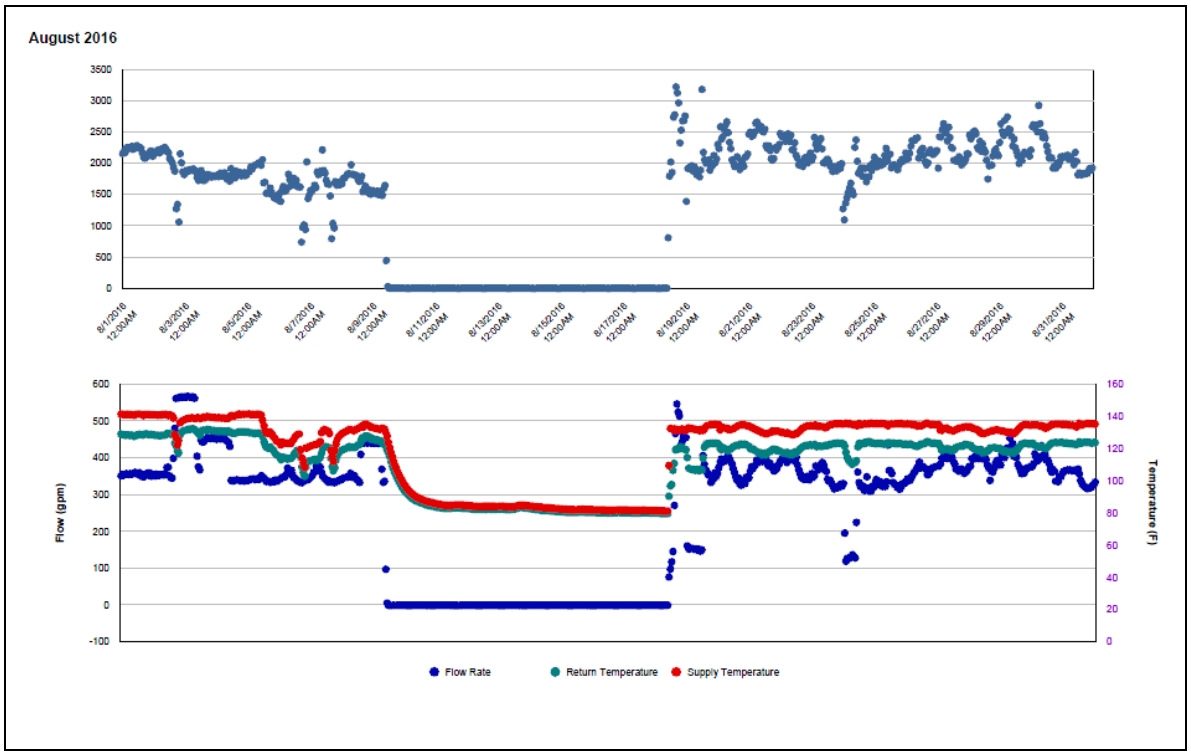
Quantitative descriptions and comments

The HHW consumption during 8/8/2016 – 8/18/2016 decreased to zero due to a zero reading in flow rate. The consumption for other days in current month is higher than the pattern of last year. The consumption for whole month was estimated by a model based on the data during 8/1/2015 – 7/31/2016.

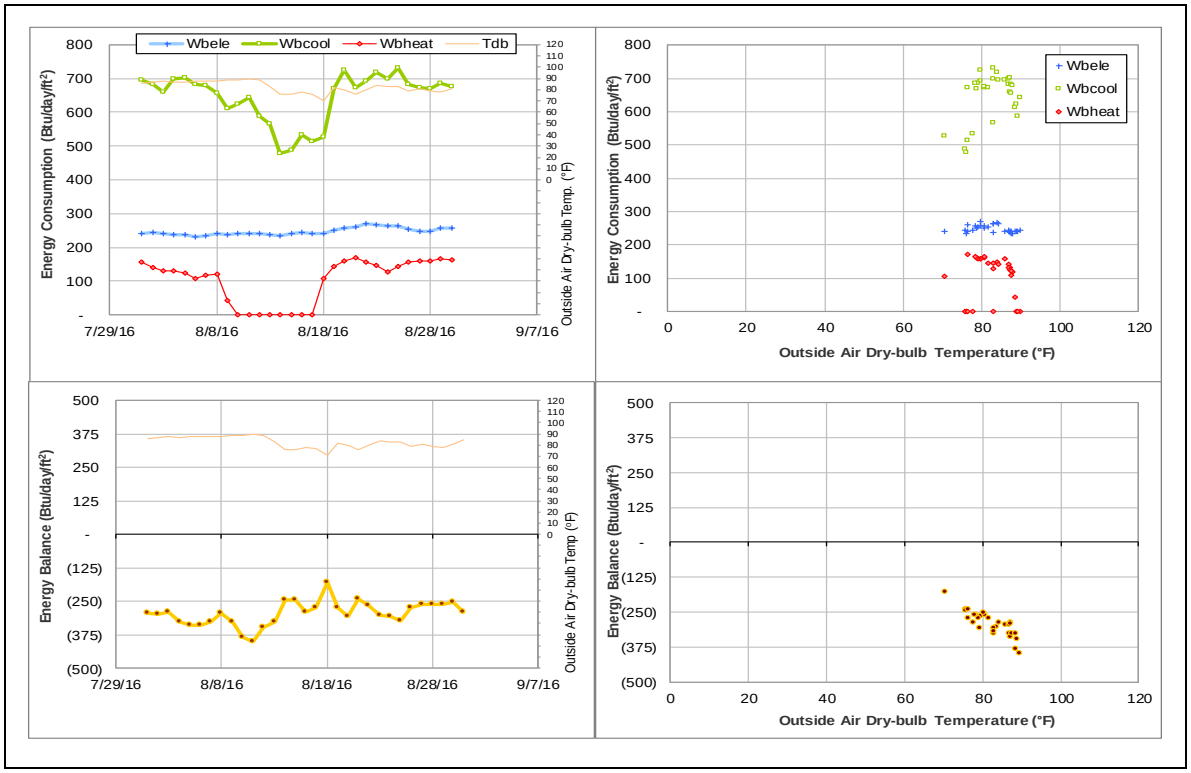
Explanatory Figure: 13 months energy balance plot with original data



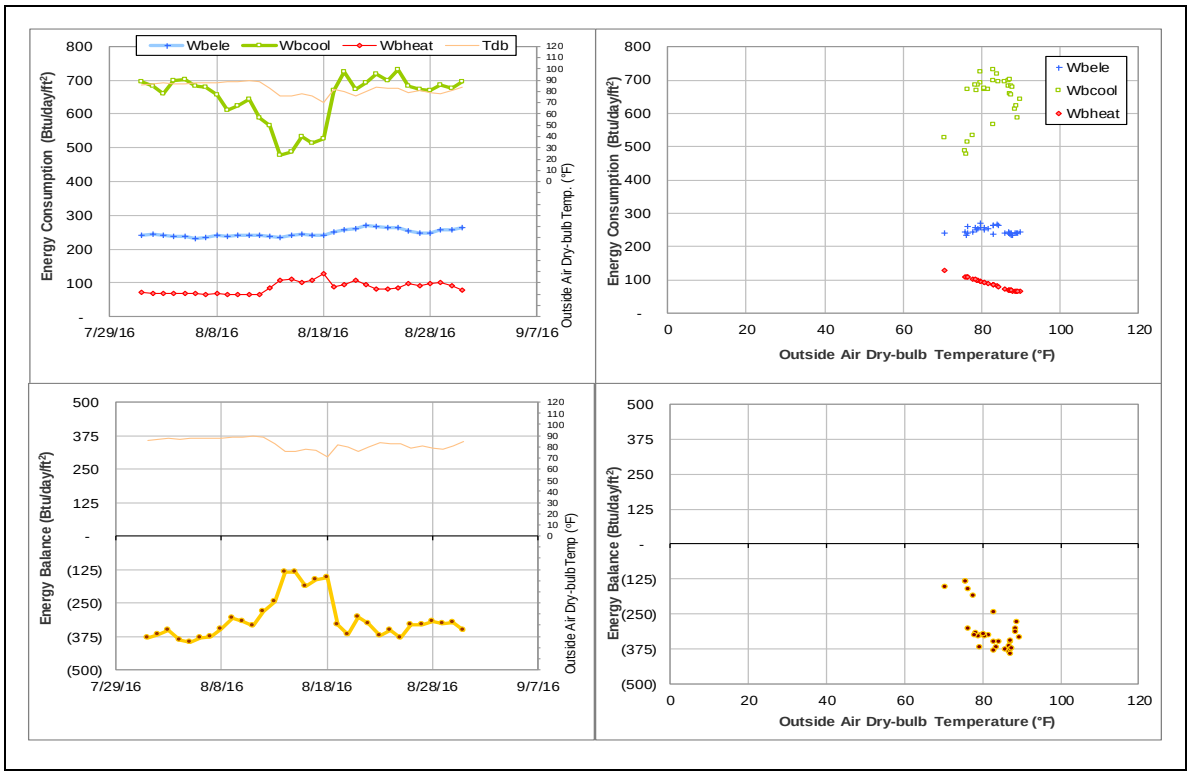
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (August 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



Texas Institute for Genomic Medicine (TAMU Bldg #1900)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	005546	6	8/1/2016 – 8/3/2016 8/22/2016 – 8/24/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	The consumption increased for some days.	8/1/2016 – 8/3/2016 8/22/2016 – 8/24/2016

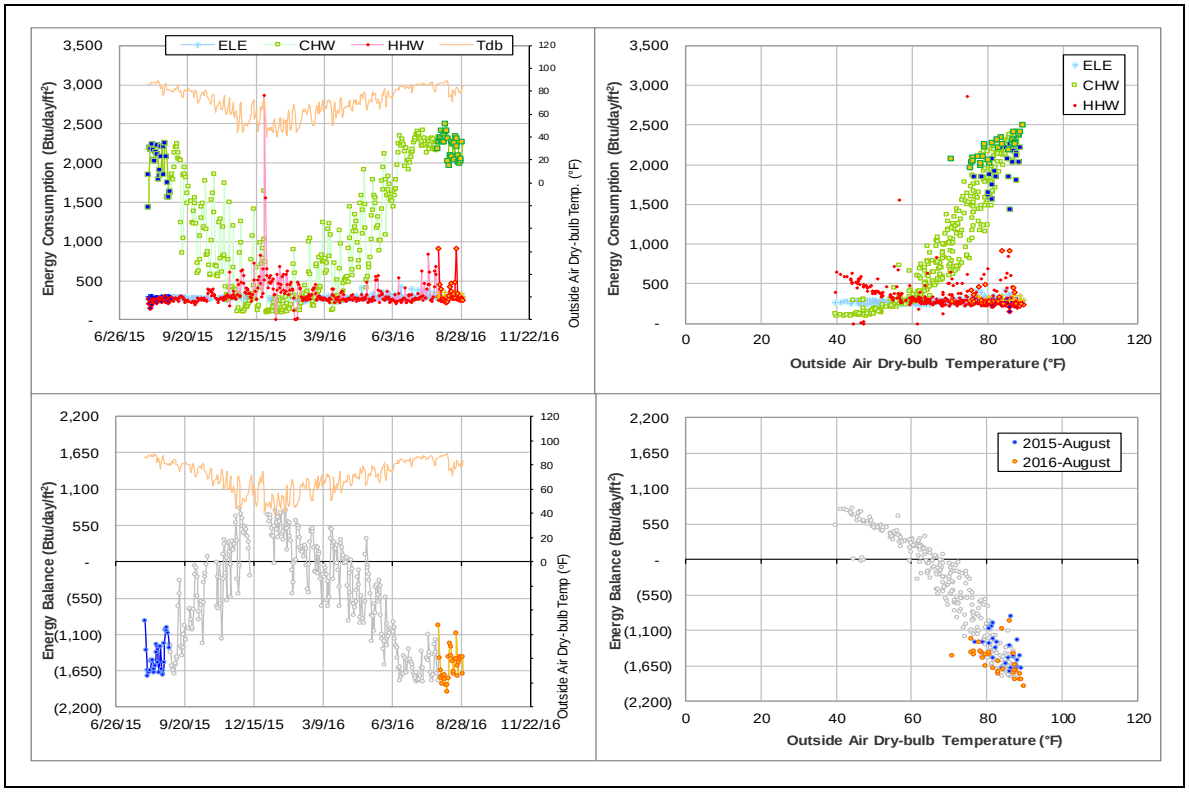
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	005546	8/1/2016 – 8/3/2016 8/22/2016 – 8/24/2016	Return temperature	Decreased

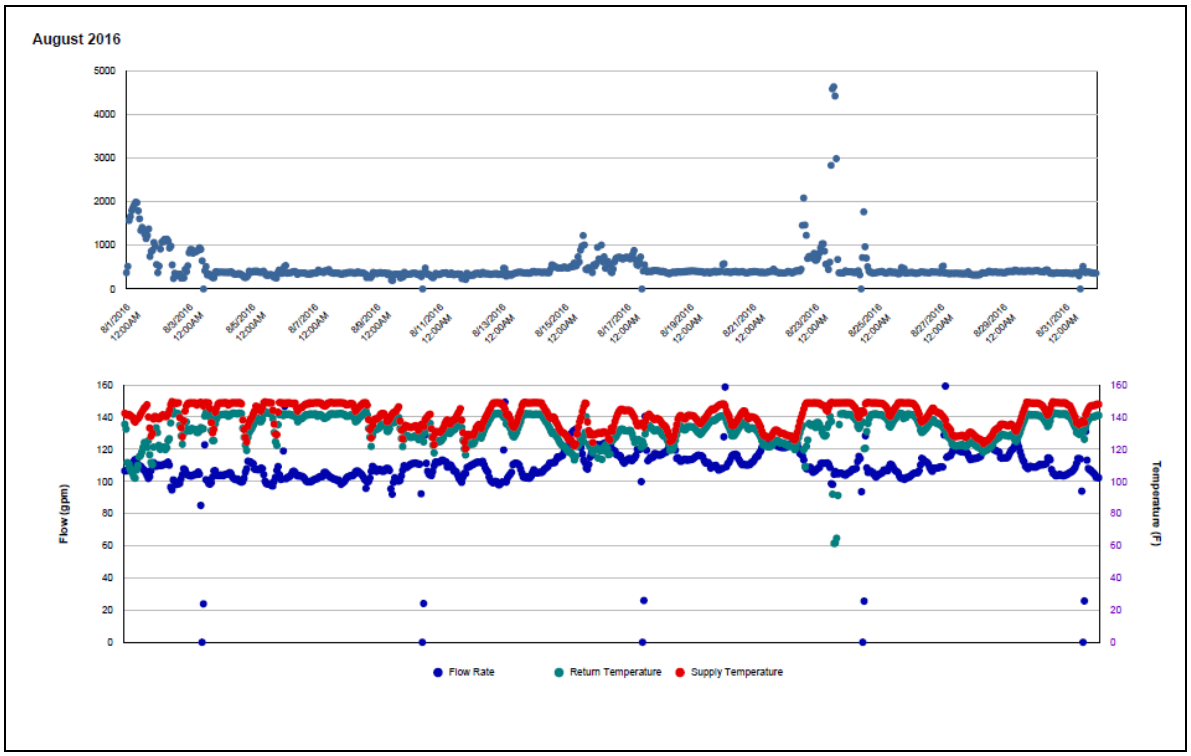
Quantitative descriptions and comments

The HHW consumption sudden increased for some days (8/1/2016 – 8/3/2016 and 8/22/2016 – 8/24/2016) due to a decrease of return temperature. The consumption for these days was estimated by a model.

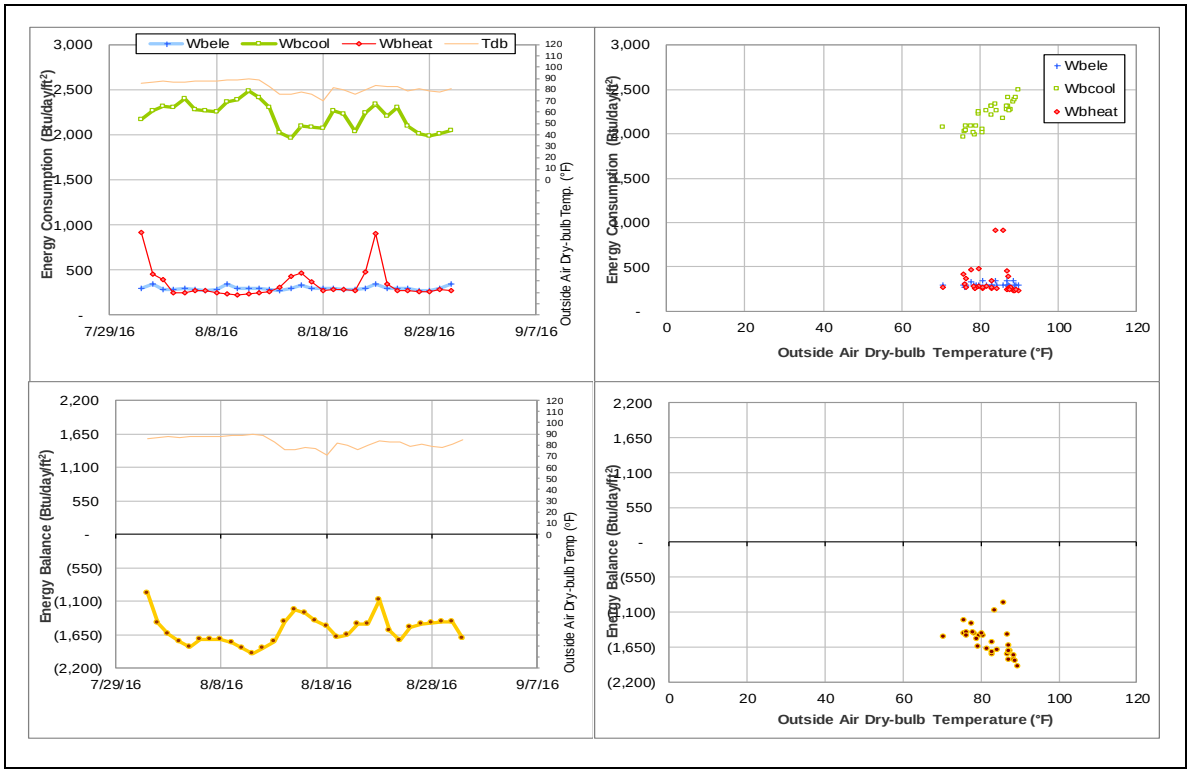
Explanatory Figure: 13 months energy balance plot with original data



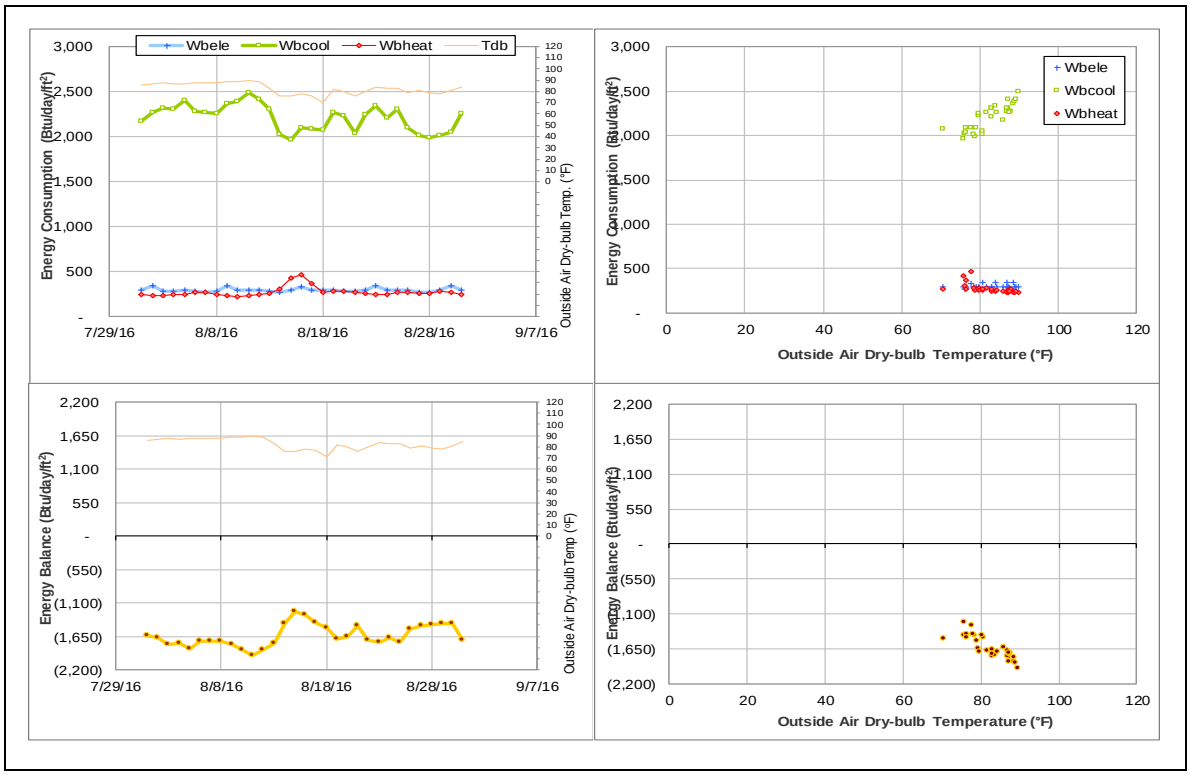
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (August 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



National Center for Therapeutics Manufacturing (TAMU Bldg #1910)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	007519	31	8/1/2016 – 8/31/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption decreased.	7/29/2016–ongoing

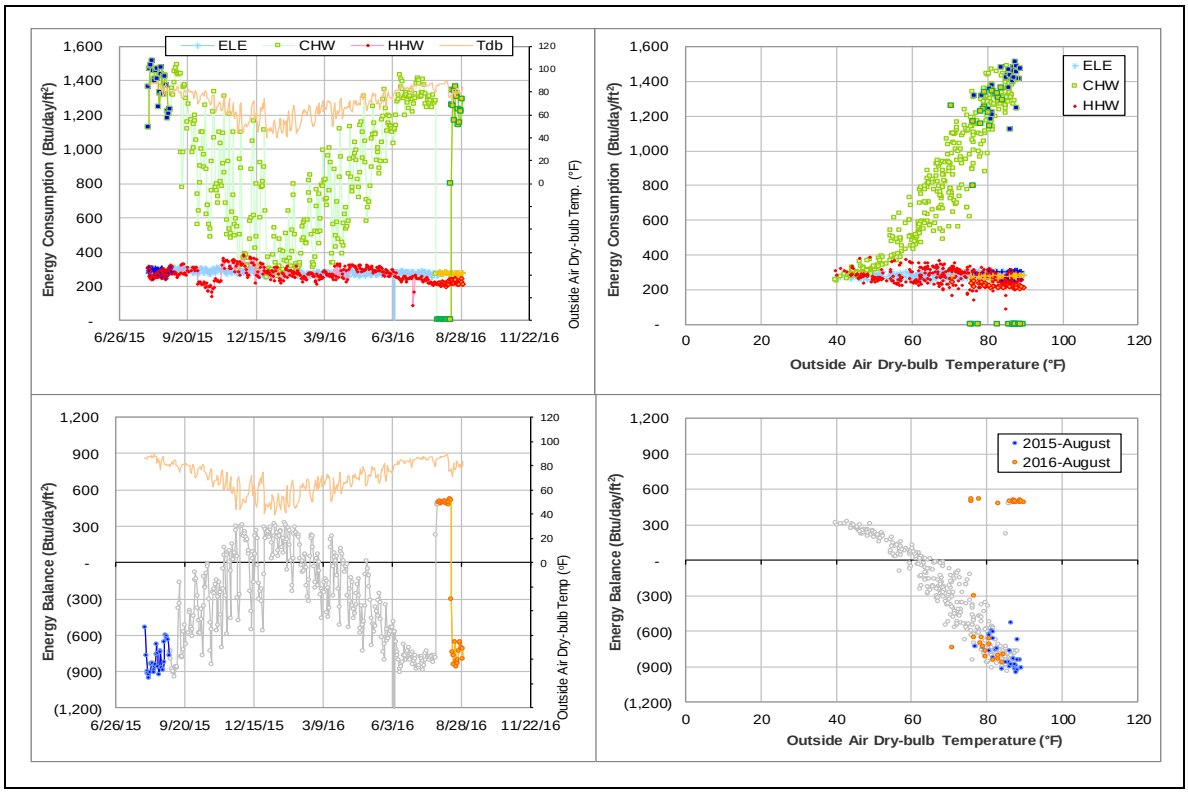
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	007519	7/29/2016–ongoing	Flow rate	Decreased to zero

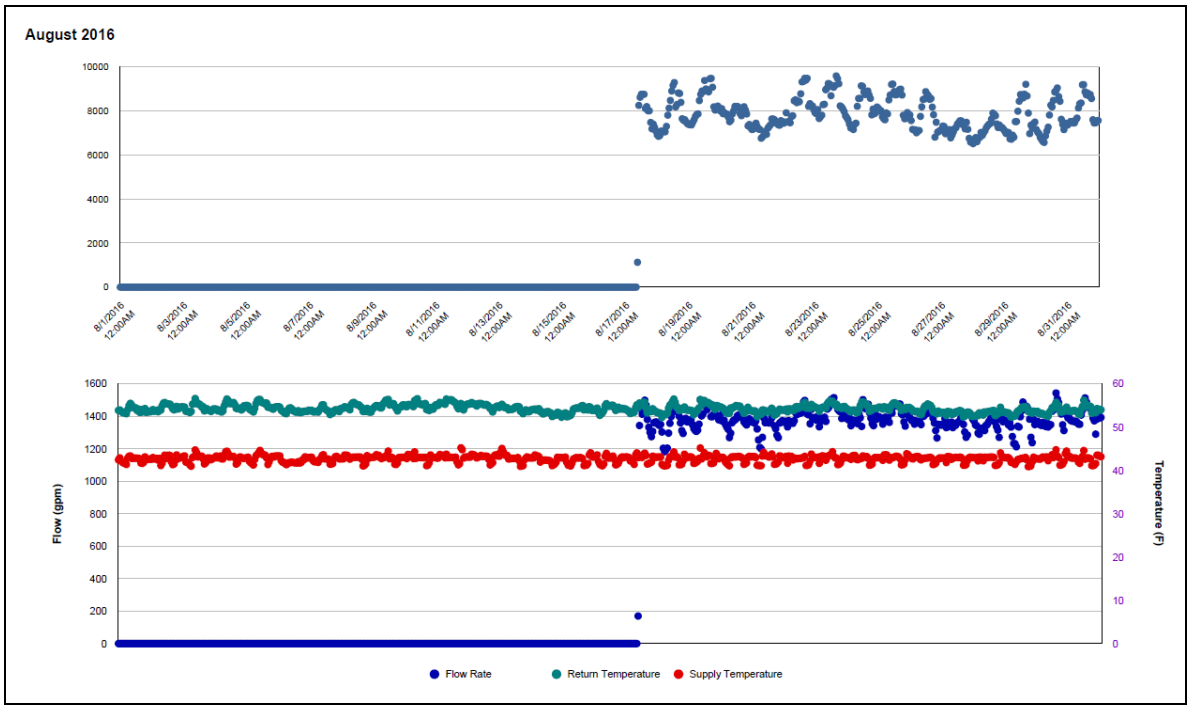
Quantitative descriptions and comments

The CHW consumption dropped to zero since 7/29/2016 due to a zero flow rate reading. The consumption for entire month was estimated by a model.

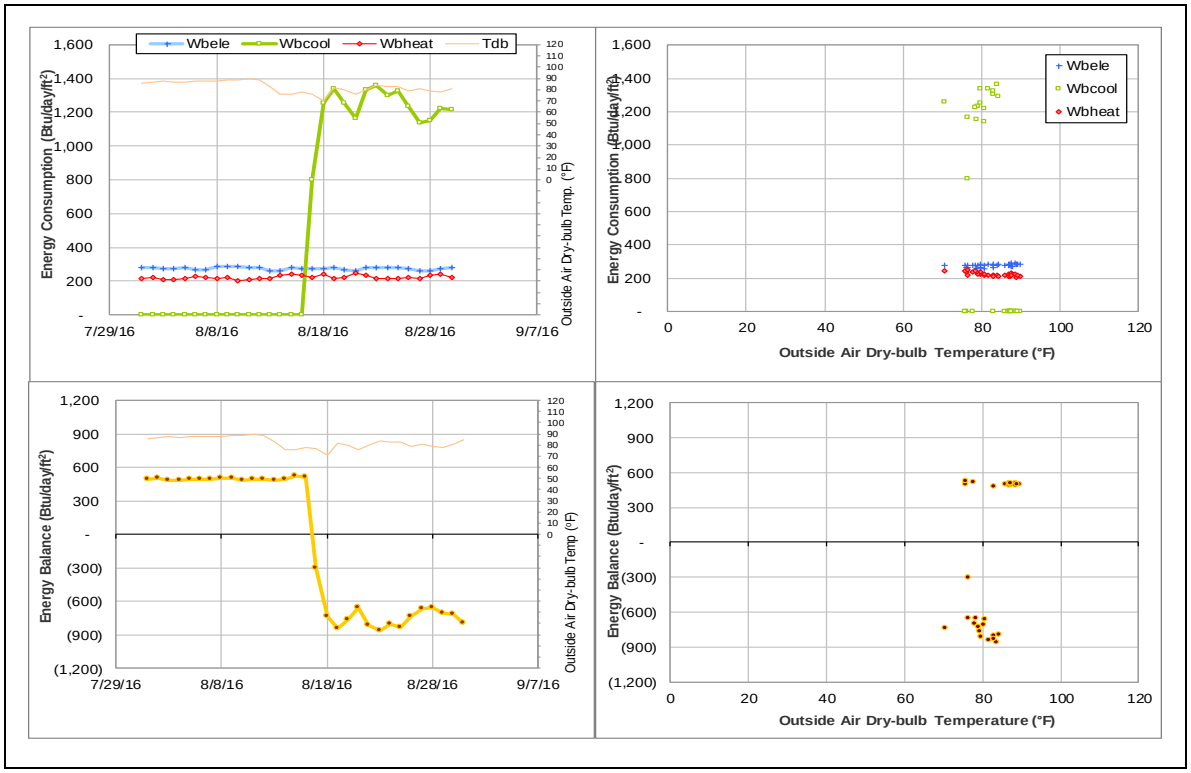
Explanatory Figure: 13 months energy balance plot with original data



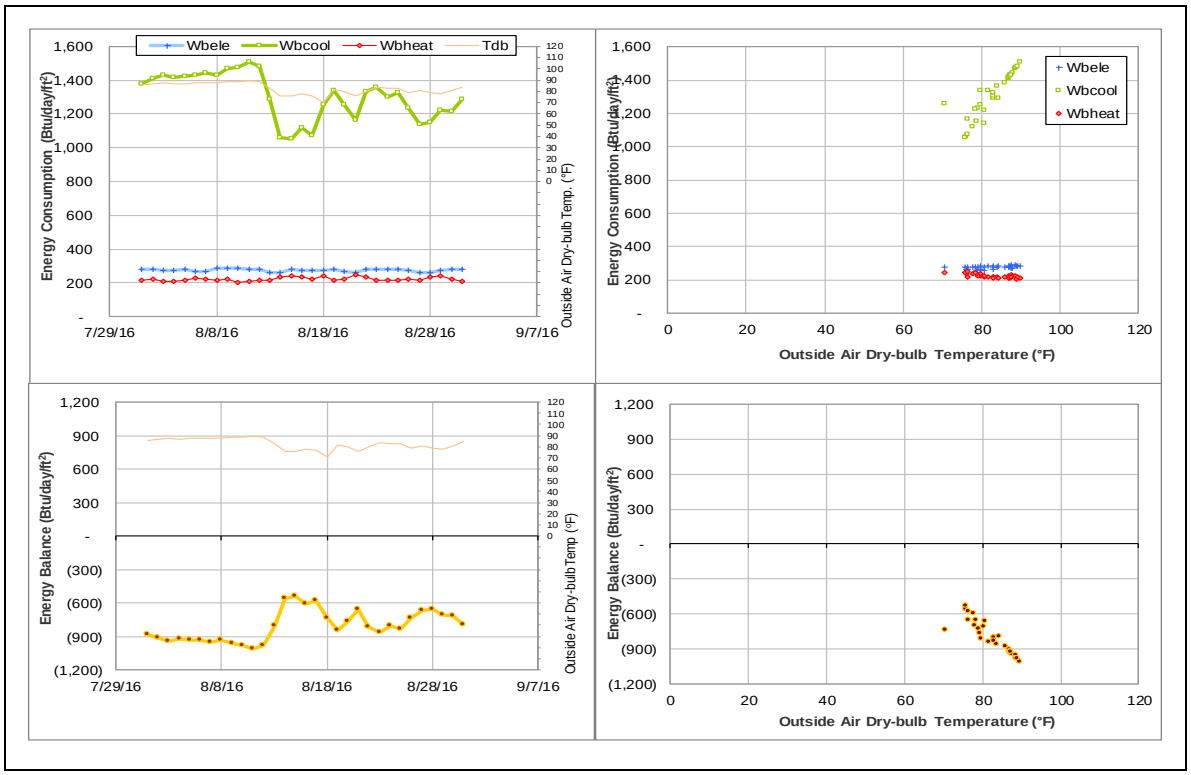
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (August 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



II-3 Meters with Significant Issues in Energy Consumption Data

In this section, significant issues in the data behavior are described. On the contrary to the section II–2, alternative consumption is not estimated for some reasons: presence of continuous problems since the beginning of the data acquisition, unbalanced energy uses in the past data, changes in the consumption patterns without evidence of data problems, etc. Table II–3 gives a list of meters included in this section.

Table II-3 Meters with significant issues in the consumption data during August 2016

Building No.	Building Name	MeterID	Type
0290	Wells Residence Hall		
		001984	CHW
		001988	HHW
0291	Rudder Residence Hall		
		002132	CHW
		002136	HHW
0293	Appelt Residence Hall		
		002062	CHW
		002066	HHW
0353	Bright Aerospace Building		
		002746	CHW
		002757	HHW
0358	Davis Football Player Development Center		
		007701	CHW
0383	Koldus Building		
		002863	CHW
		002874	HHW
0394	Underwood Residence Hall		
		000014	ELE
0402	Briggs Hall Dorm 3		
		009328	HHW
0401-1404	Kiest Hall, and Plank LLC		
		009312	HHW
0403	Fountain Hall Dorm 5		
		009344	HHW
0406-1403	Leonard Hall - Dorm 7 and Ash LLC		
		007983	HHW
0404	Gainer Hall Dorm 5		
		009360	HHW
0405-0407-1402	Harrell Hall - Dorm 8 and Buzbee LLC		
		007722	CHW
		007723	HHW
0405	Lacy Hall - Dorm 6		
		007918	CHW
		007919	HHW
1402	Buzbee Leadership Learning Center		
		007725	CHW
		007726	HHW
0412	Moses Residence Hall		
		002384	CHW
0425	Henderson Hall		
		002607	CHW
471	Pavilion		
		002780	HHW
478	Scoates Hall		
		007961	ELE
		007968	CHW
		007969	HHW
496	Utilities & Energy Services Central Office		
		007706	ELE
		006929	CHW
		006933	HHW
499	Engineering Innovation Center		
		002672	CHW
506	Nagle Hall		
		001484	ELE
520	Beutel Health Center		
		003785	ELE
524	Blocker building		
		002918	HHW
880	TVMC-Small Animal Building		
		005962	HHW
1026	Veterinary Medicine Administration		
		006053	HHW
1146	Biological Control Facility		
		005795	ELE
1156	Physical Plant Administration & Shops		
		007679	CHW
1197	Veterinary Research Building		
		006355	ELE
		006359	ELE
1501	Kleberg Center		
		002624	CHW
1601	International Ocean Discovery Building		
		006351	ELE
		006382	CHW
		008144	CHW
		008145	HHW
1604	Offshore Technology Research Center		
		006659	ELE
		006660	ELE

Wells Residence Hall (TAMU Bldg #290)

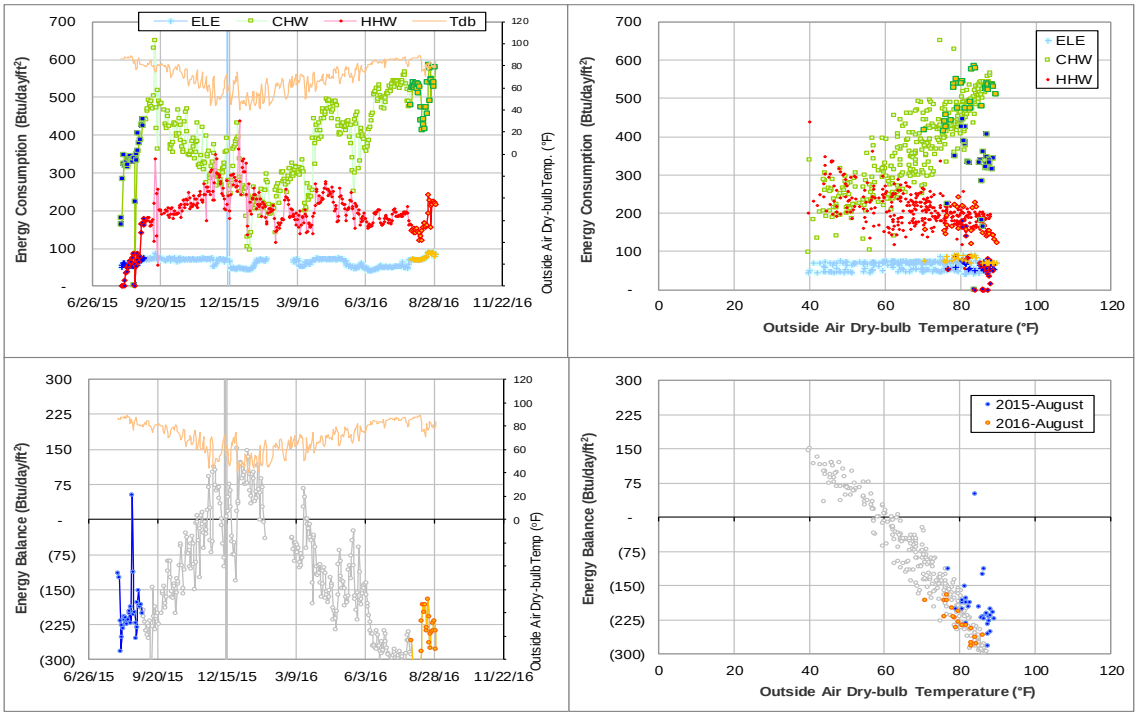
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW/HHW	Both the CHW and HHW consumption levels are higher than the same month of last year.	Since April 2016

Comments

Both the CHW and HHW consumption increased since the month of April 2016. The CHW/HHW consumption of this month was about 150 Btu/day/ft^2 higher than the same month of last year. This building has a low level of energy balance load with the cross-point temperature around 60°F. The low E_{BL} level suggests imbalance of metered energy use in the building, but we are not able to determine the cause.

Explanatory Figure: 13 months energy balance plot with original data



Rudder Residence Hall (TAMU Bldg #291)

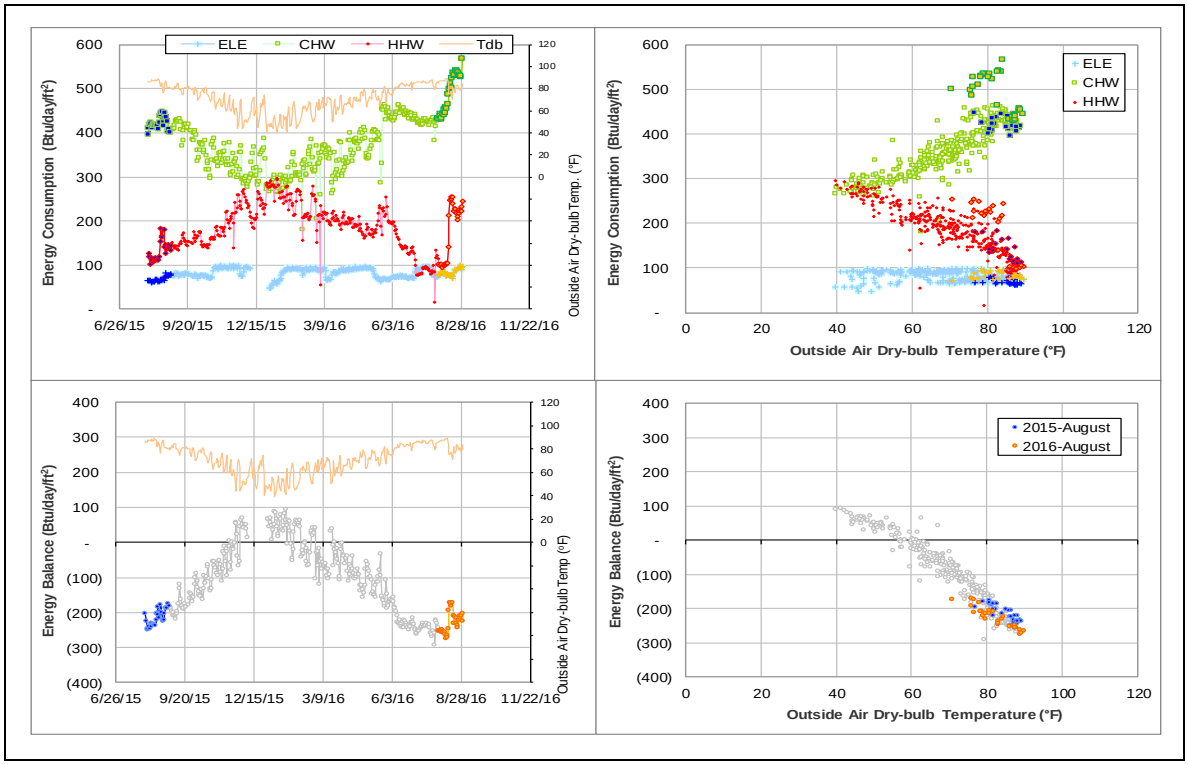
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The energy balance level is low. The cross-point temperature is around 60°F.	For several years

Comments

This building has a low level of energy balance load with the cross-point temperature around 60°F for the past year. The low E_{BL} level suggests imbalance of metered energy use in the building, but we are not able to determine the cause. Also see II-2 for more information.

Explanatory Figure: 13 months energy balance plot with original data



Appelt Residence Hall (TAMU Bldg #293)

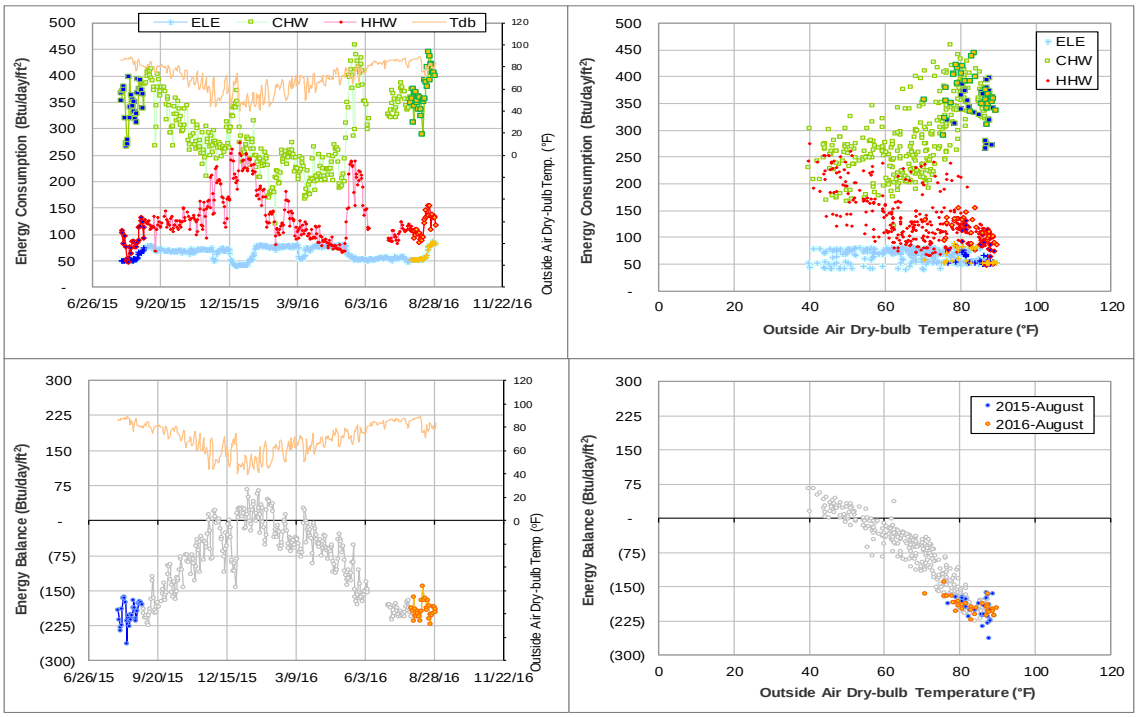
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level suddenly decreased.	Since December 2014
HHW	The consumption gradually decreased.	Since January 2015
Energy Balance	The energy balance decreased and the cross-point temperature is around 55°F.	Since January 2015

Comments

Both the CHW and HHW consumption levels have decreased, respectively. As a result, the energy balance load was low with the cross-point temperature around 55°F. The low E_{BL} level suggests imbalance of metered energy use in the building, but we are not able to determine the cause.

Explanatory Figure: 13 months energy balance plot with original data



Bright Building (TAMU Bldg #353)

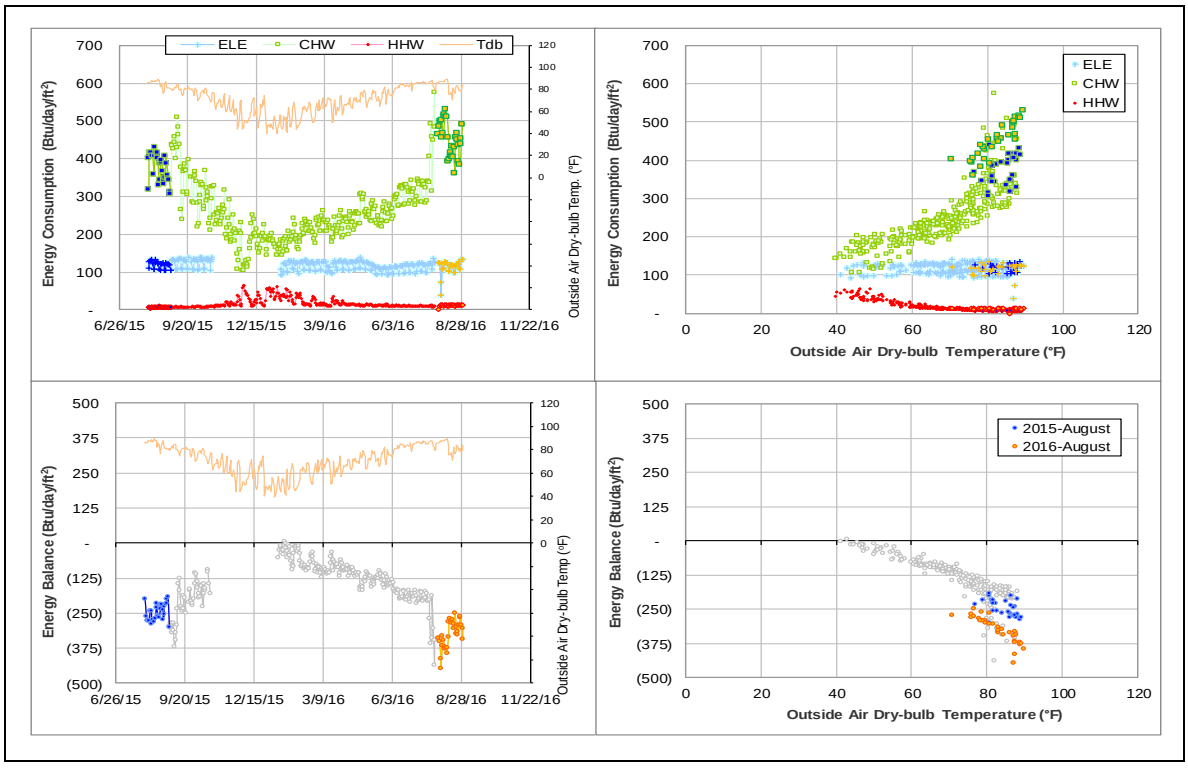
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The energy balance level has been low for years. The cross-point temperature was in the range of 40 - 70 °F.	For several years

Comments

The energy balance load (E_{BL}) of this building has varied but always been low (the cross-point temperature was between 40°F and 70°F) for years. In the past 12 months, the cross-point temperature was below 50°F. CHW consumption increased greatly on 7/21/2016 and pulled EB down even further. The electricity use level was in a typical range for office and classroom buildings on campus. Therefore, either CHW or HHW consumption might be causing the unbalanced energy balance in the building.

Explanatory Figure: 13 months energy balance plot with original data



Davis Football Player Development Center (TAMU Bldg #358)

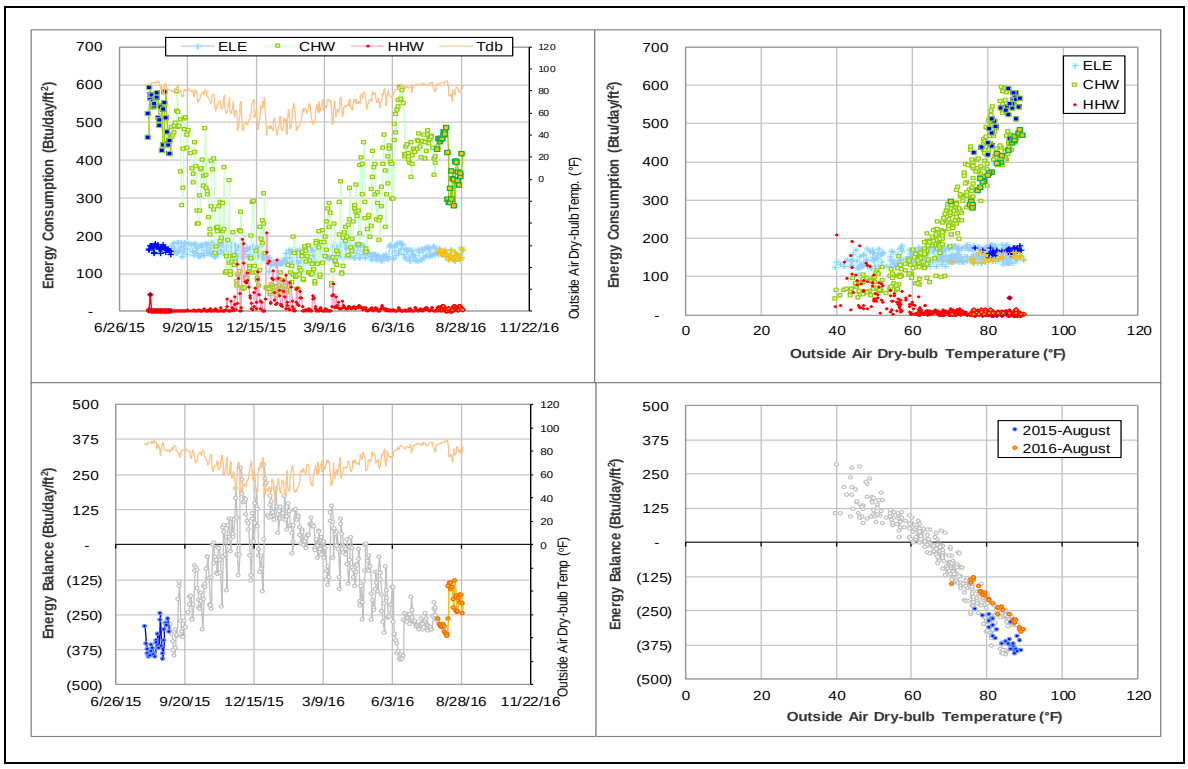
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	Decreased	6/18/2016 - ongoing

Comments

CHW has been decreasing since 6/18/2016, and decreased further since 8/13/2016. EB is affected and pulled up.

Explanatory Figure: 13 months energy balance plot with original data



Koldus Building (TAMU BLDG # 383)

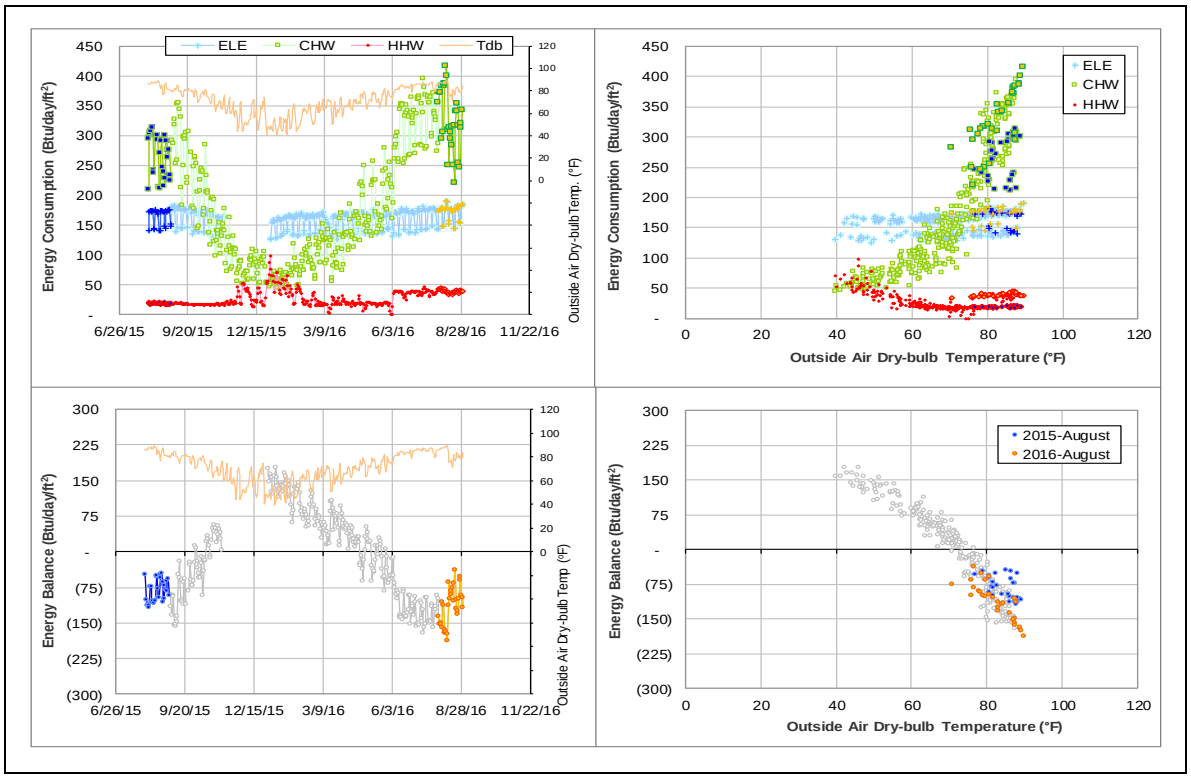
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW/HHW	The consumption suddenly increased.	Since early of June 2016

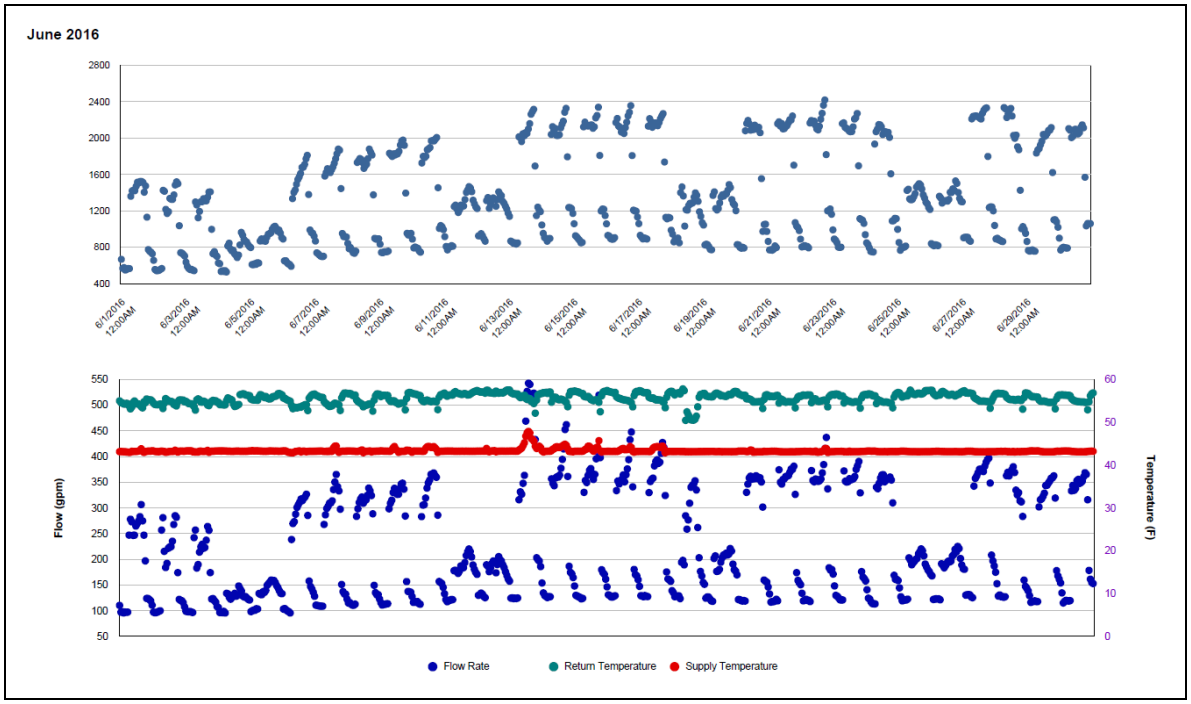
Comments

There CHW and HHW consumption both increased since early of June 2016. CHW consumption was about 50 Btu/day/ft^2 higher the same period of last year, as the return temperature and the flow rate both increased a little since 6/5/2016. The consumption level seem to have returned on 8/12/2016. Around the same time, HHW consumption was about 20 Btu/day/ft^2 higher comparing to the past year, because the flow rate increased and the return temperature decreased. However, the energy balance didn't change much.

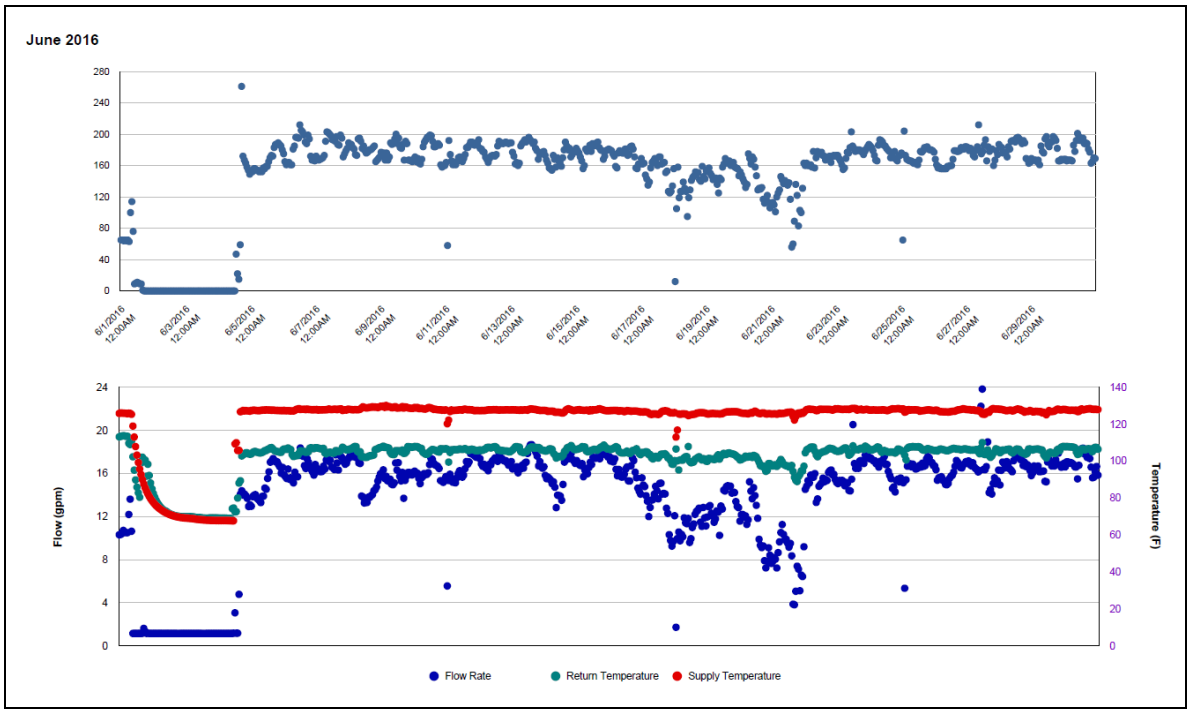
Explanatory Figure: 13 months energy balance plot with original data



Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during June 2016)



Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during June 2016)



Underwood Hall (TAMU BLDG # 394)

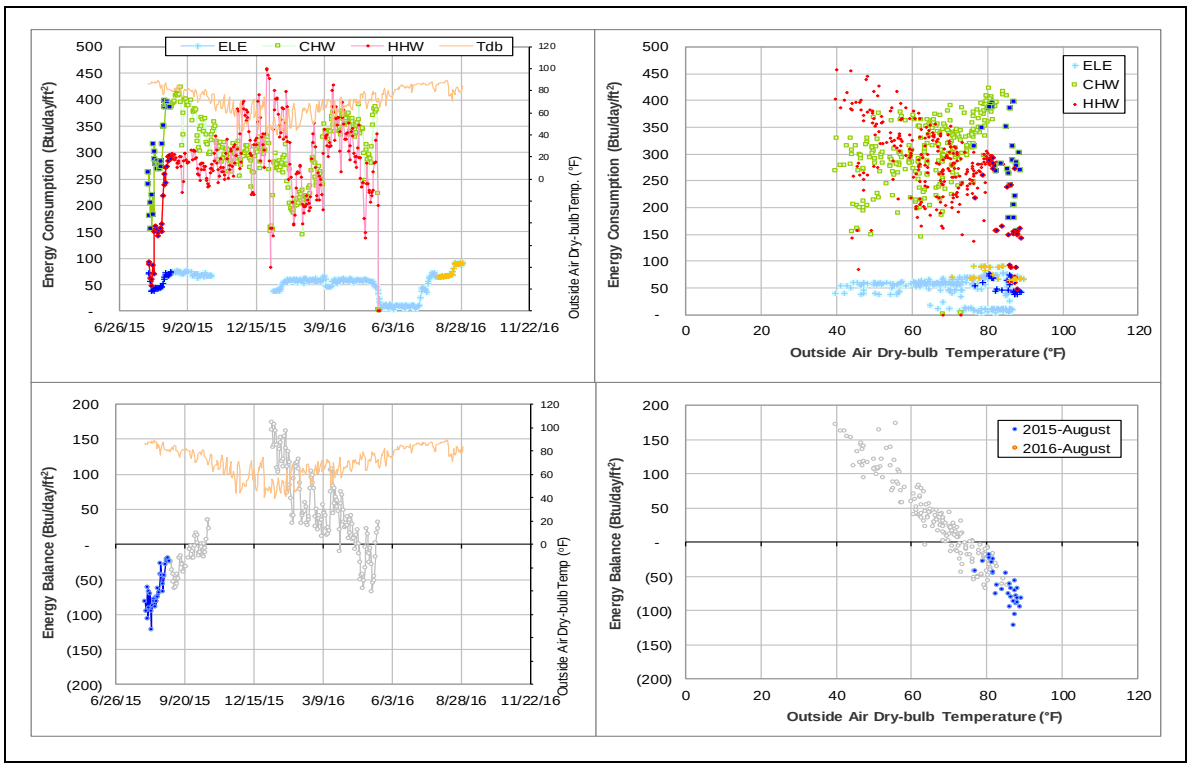
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The consumption gradually decreased.	Since middle of May 2016

Comments

There was no consumption for CHW and HHW since May 2016, because the HVAC system has been under renovation. The ELE consumption gradually decreased by 50 Btu/day/ft^2 (75%) during the middle of May 2016. The decrease of the ELE use could be related to the renovation. However, the ELE consumption in July 2016 gradually increased back to the previous consumption level and even higher this month.

Explanatory Figure: 13 months energy balance plot with original data



Briggs Hall, Kiest Hall, Fountain Hall, Geiner Hall, Harrell Hall, Lacy Hall, Plank LLC, Buzbee LLC (TAMU BLDG # 401, 402, 403, 404, 405, 407, 1402, 1404)

Detected issues in the energy balance and/or the consumption data

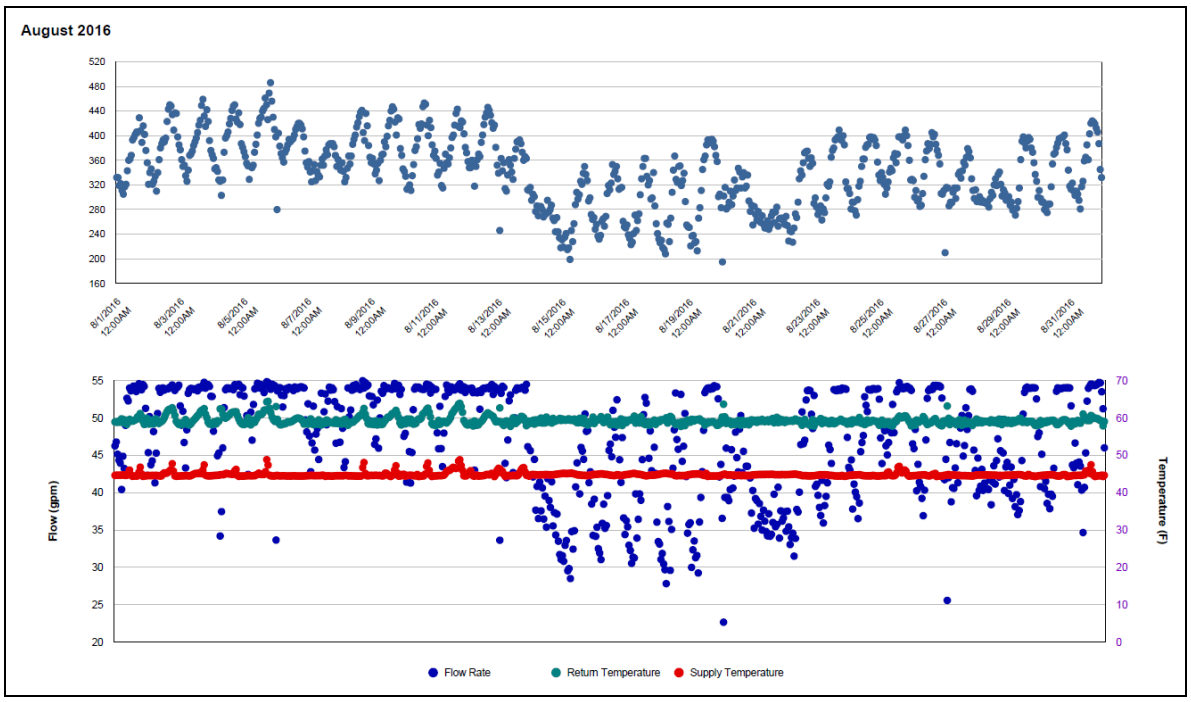
Data Type	Description of data behaviors	Period
CHW/HHW	Zero flow showed up in multiple MID's.	8/3/2016 – 8/5/2016

Energy Type	Meter ID	Period	Building Served	New MID?
HHW	009328	8/3/2016 – 8/5/2016	#0402	Yes
HHW	009312	8/3/2016 – 8/5/2016	#0401-1404	Yes
HHW	009344	8/3/2016 – 8/5/2016	#0402	Yes
HHW	009360	8/3/2016 – 8/5/2016	#0404	Yes
CHW	007722	8/3/2016 – 8/5/2016	#0405-0407-1402	No
HHW	007723	8/3/2016 – 8/5/2016	#0405-0407-1402	No
CHW	007918	8/3/2016 – 8/5/2016	#0405	No
HHW	007919	8/3/2016 – 8/5/2016	#0405	No
CHW	007725	8/3/2016 – 8/5/2016	#1402	No
HHW	007726	4/12/2016 – 8/12/2016	#1402	No

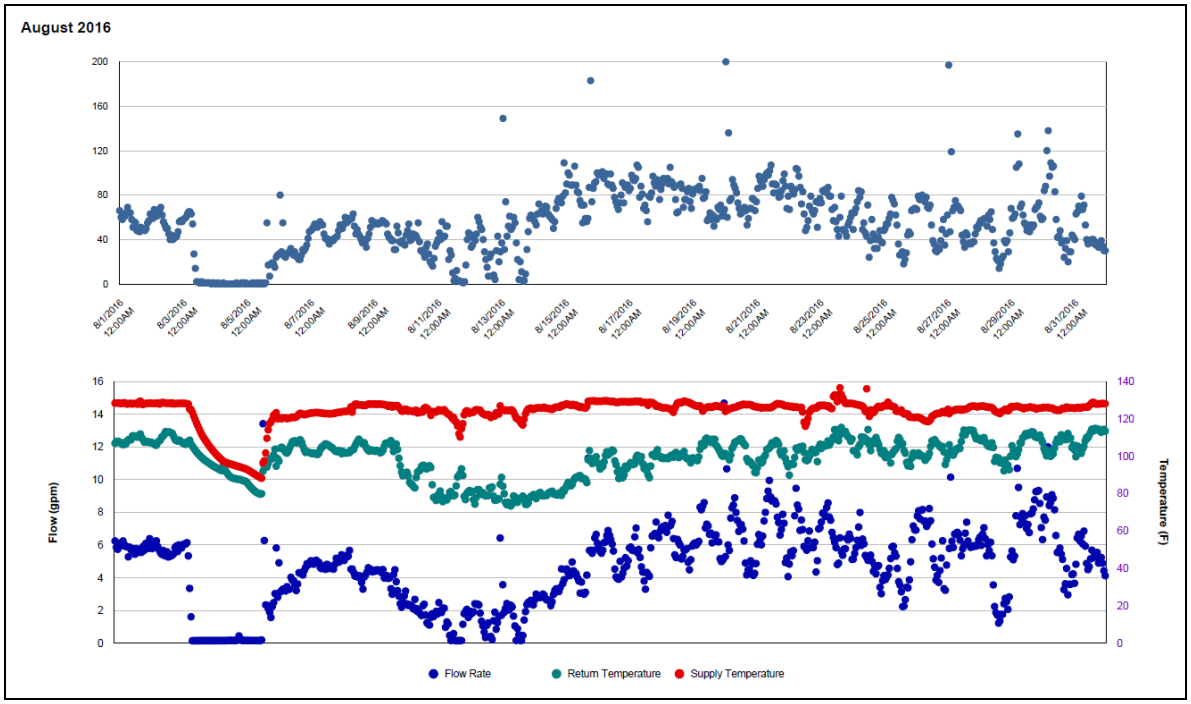
Comments

The 9 meters listed above all have zero flow readings during 8/3 – 8/5/2016. It is reasonable to conclude that this is due to HHW close other than meter problem. Although monthly profiles are not yet available for the new meters, old meters have reasonable temperature response which gradually reached room temperature when the flow drops to zero.

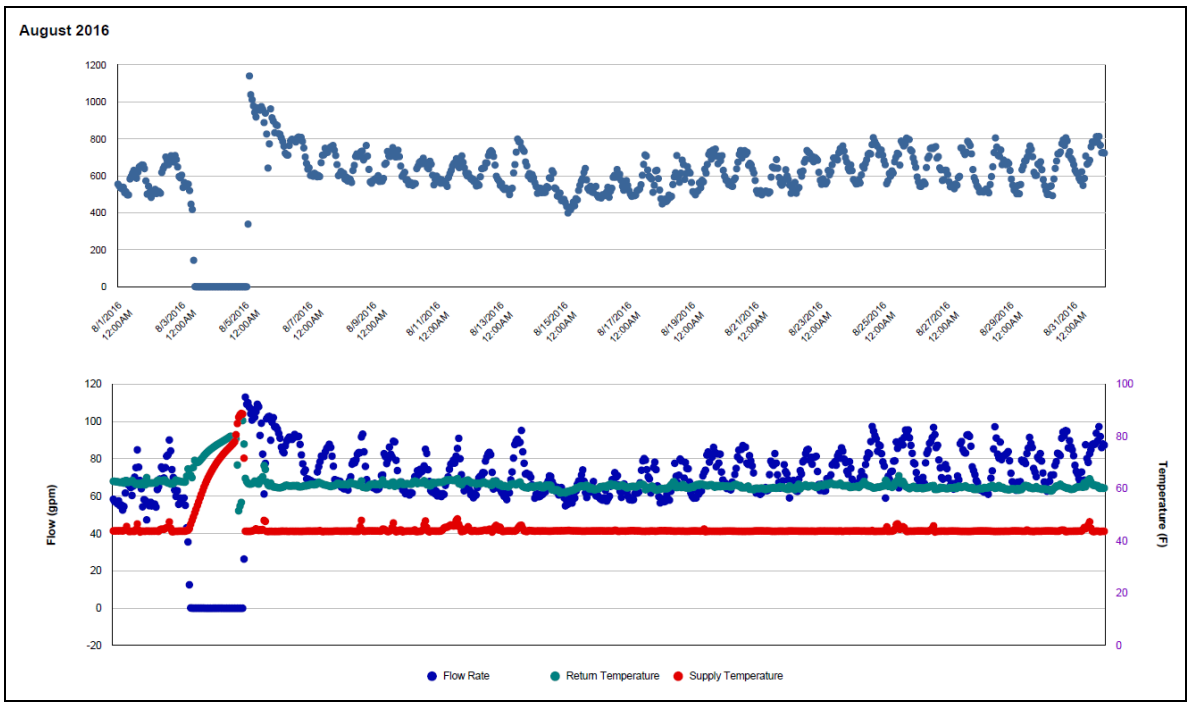
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW MID 007722 during August 2016)



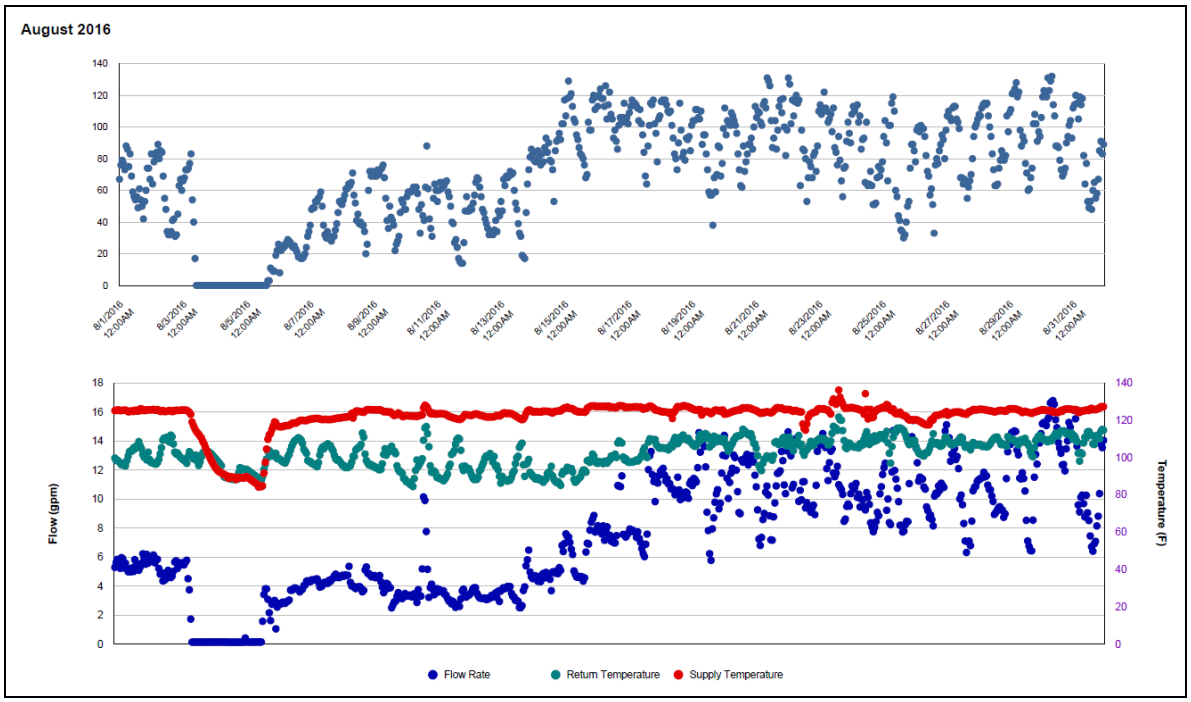
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW MID 007723 during August 2016)



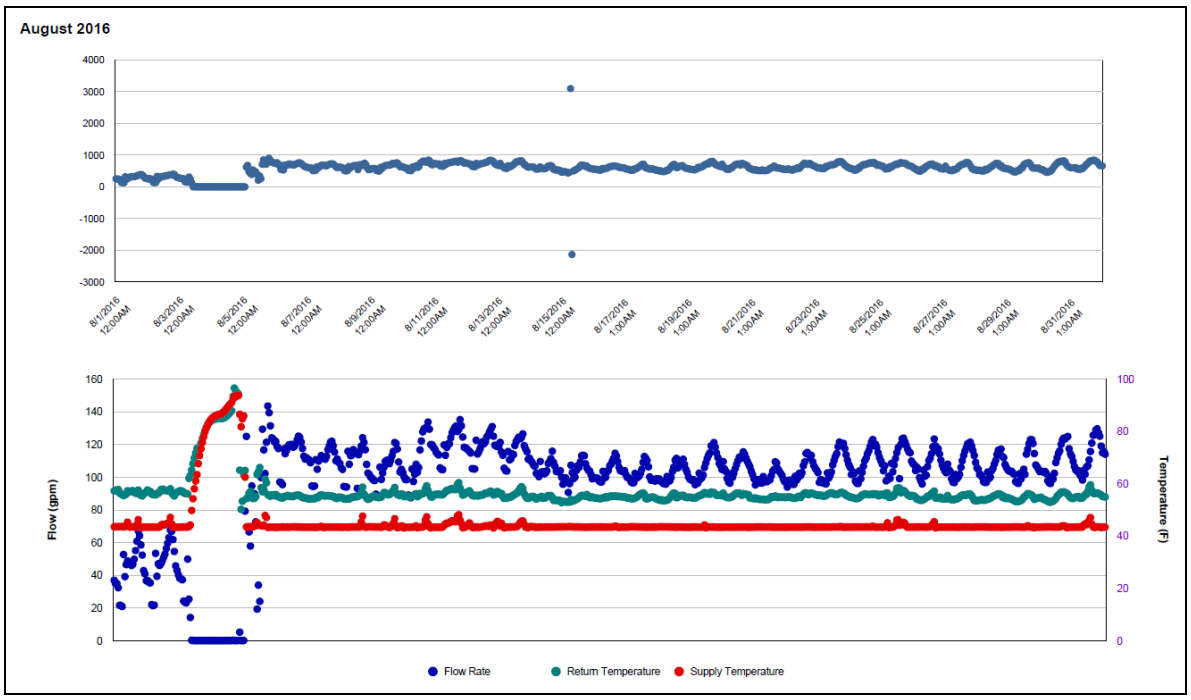
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW MID 007918 during August 2016)



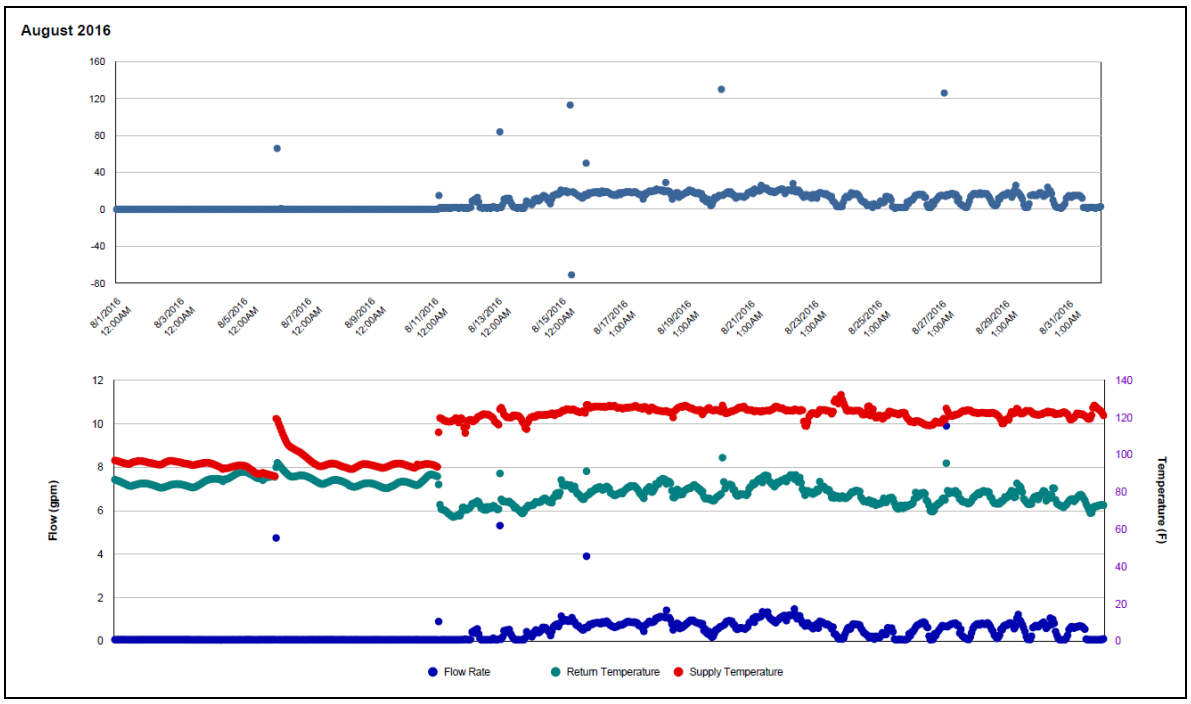
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW MID 007919 during August 2016)



Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW MID 007725 during August 2016)



Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW MID 007726 during August 2016)



Moses Residence Hall (TAMU BLDG # 412)

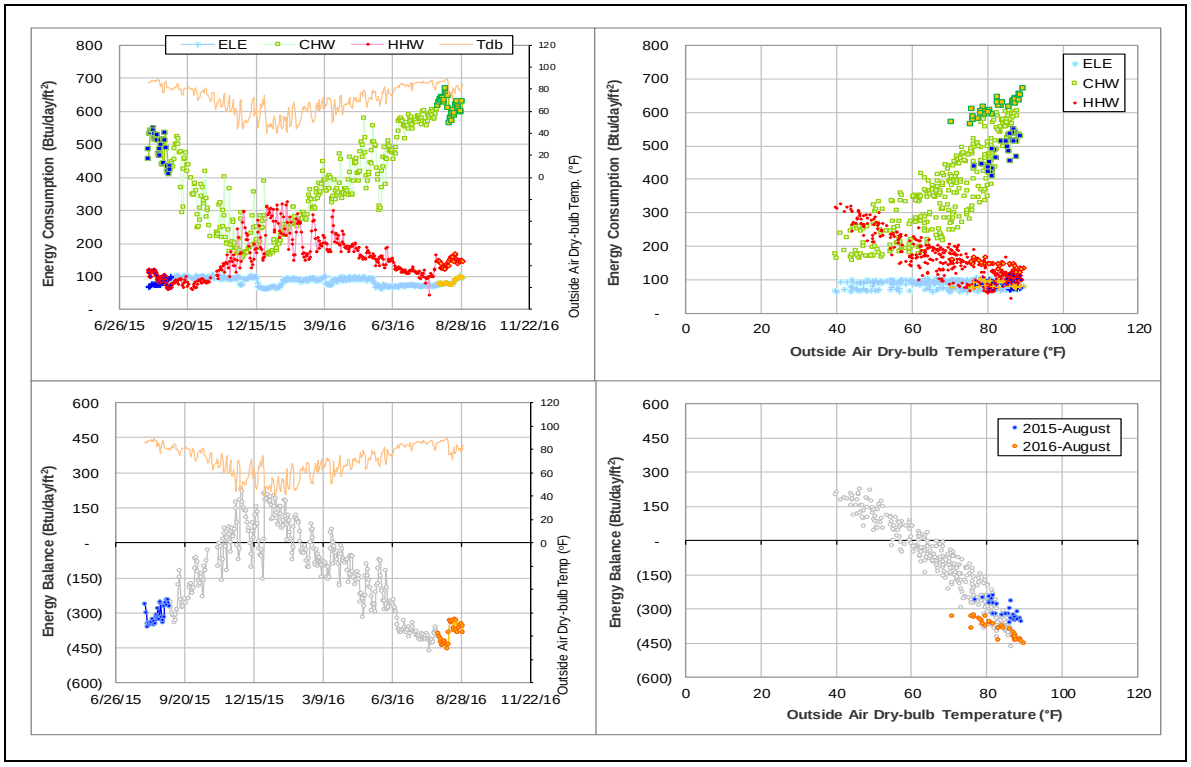
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level was higher than the same month of last year.	Since March 2016
Energy Balance	The energy balance decreased and the cross-point temperature was around 60°F.	Since March 2016

Comments

The CHW consumption was higher (about 100 Btu/day/ft^2 higher for July) than the same month of the last year since March 2016, which resulted the lower energy balance with the cross-point temperature decreased from 65°F to 60°F.

Explanatory Figure: 13 months energy balance plot with original data



Henderson Hall (TAMU BLDG # 425)

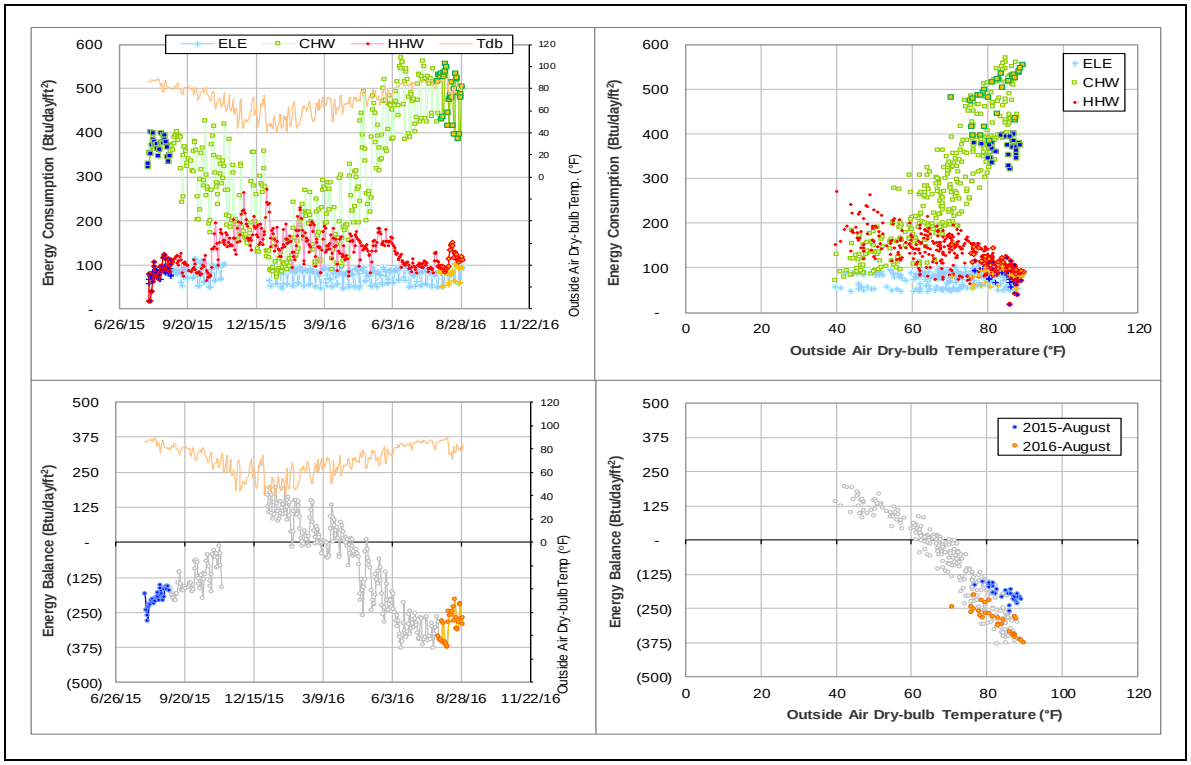
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption increased.	4/25/2016 – ongoing

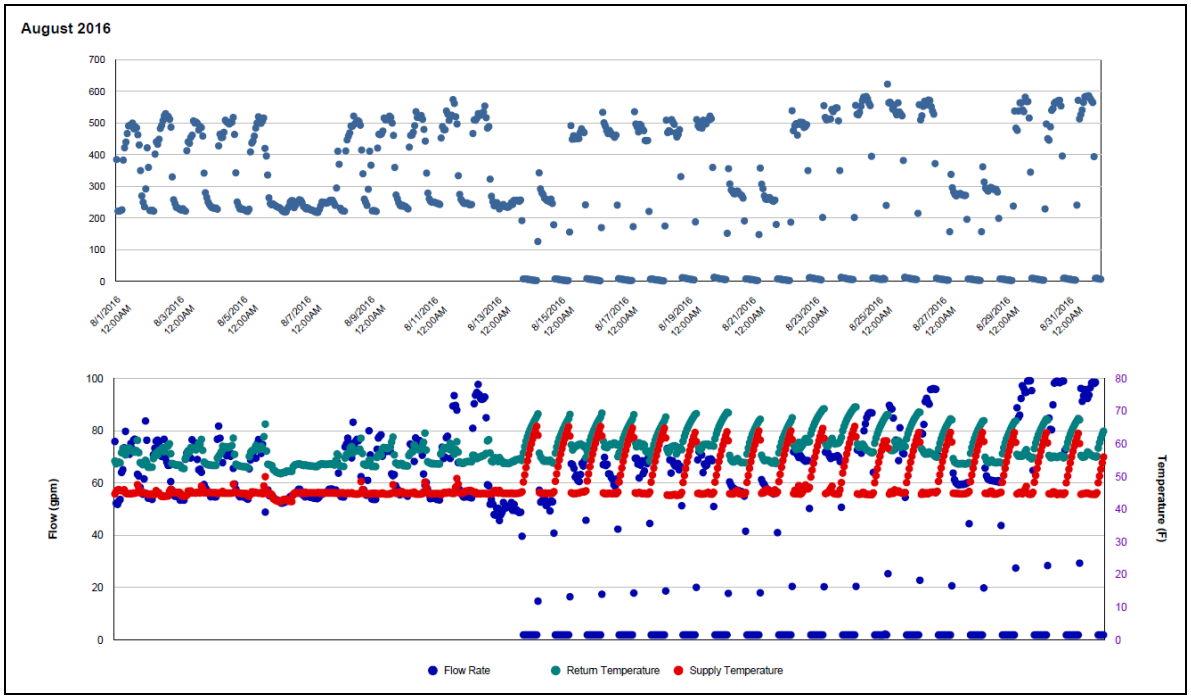
Comments

CHW consumption after 4/25/2016 is around 100 Btu/day/ft^2 higher than same month last year. The HHW also increased on 8/14/2016 due to move-in, but CHW did not respond accordingly.

Explanatory Figure: 13 months energy balance plot with original data



Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during August 2016)



Mosher Residence Hall (TAMU BLDG # 433)

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The consumption level suddenly decreased.	Since 1/23/2016
ELE	The consumption gradually decreased.	Since middle of May 2016
HHW	The consumption gradually increased.	Since middle of May 2016

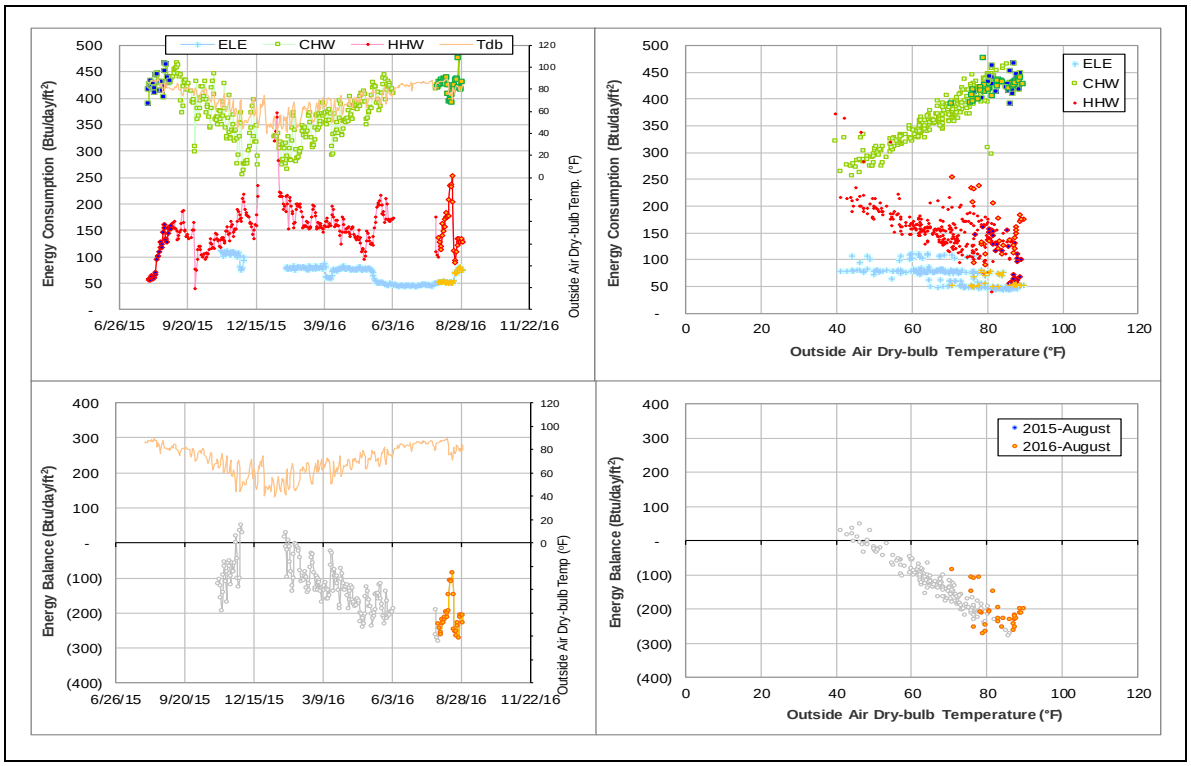
Comments

The cross-point temperature for this building was around 55°F before March 2015. CHW consumption increased 50- 100 Btu/day/ft^2 due to an increase of flow rate after March 2015 and the pattern was stable over one year. As a result, the cross-point temperature decreased from ~ 55°F to ~50°F.

The ELE meter (MID 009083) replaced old meter (MID 000290) since January 2016. After that, the consumption decreased from ~105 Btu/day/ft^2 to ~80 Btu/day/ft^2 (approximately 25%). The CHW and HHW consumption levels didn't changed. The cross-point temperature was further decreased and it is lower than 50°F now. It is suggested to investigate this meter.

In the middle of May 2016, the ELE further decreased to 50 Btu/day/ft^2 and the HHW consumption increased by 50 Btu/day/ft^2. However, the energy balance pattern didn't change.

Explanatory Figure: 13 months energy balance plot with original data



Rudder Theatre Complex (TAMU BLDG # 446)

Detected issues in the energy balance and/or the consumption data

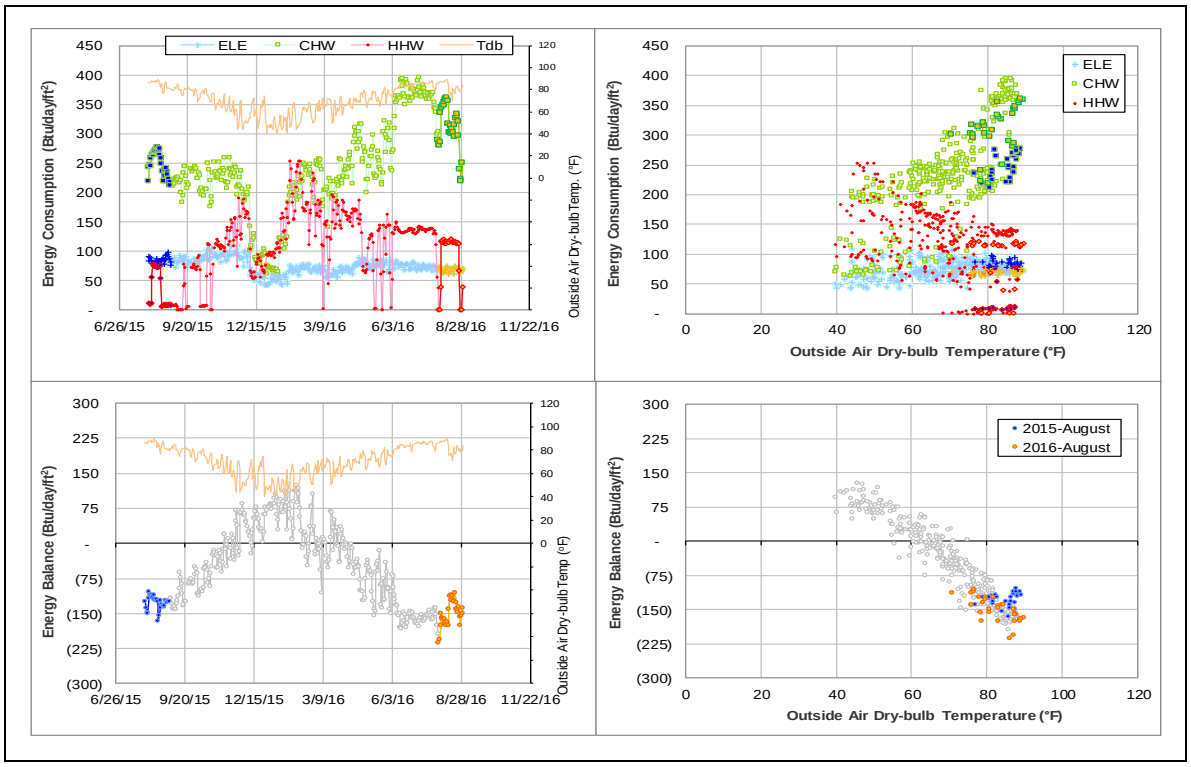
Data Type	Description of data behaviors	Period
CHW/HHW	The consumption has increased, and was higher than the same month of last year.	Since June 2016

Comments

The CHW and HHW consumption has increased and was about 120 But/day/ft^2 higher than the same month of last year since June 2016. However, the energy balance pattern didn't change.

HHW consumption decreased to nearly zero frequently.

Explanatory Figure: 13 months energy balance plot with original data



Pavilion (TAMU Bldg #471)

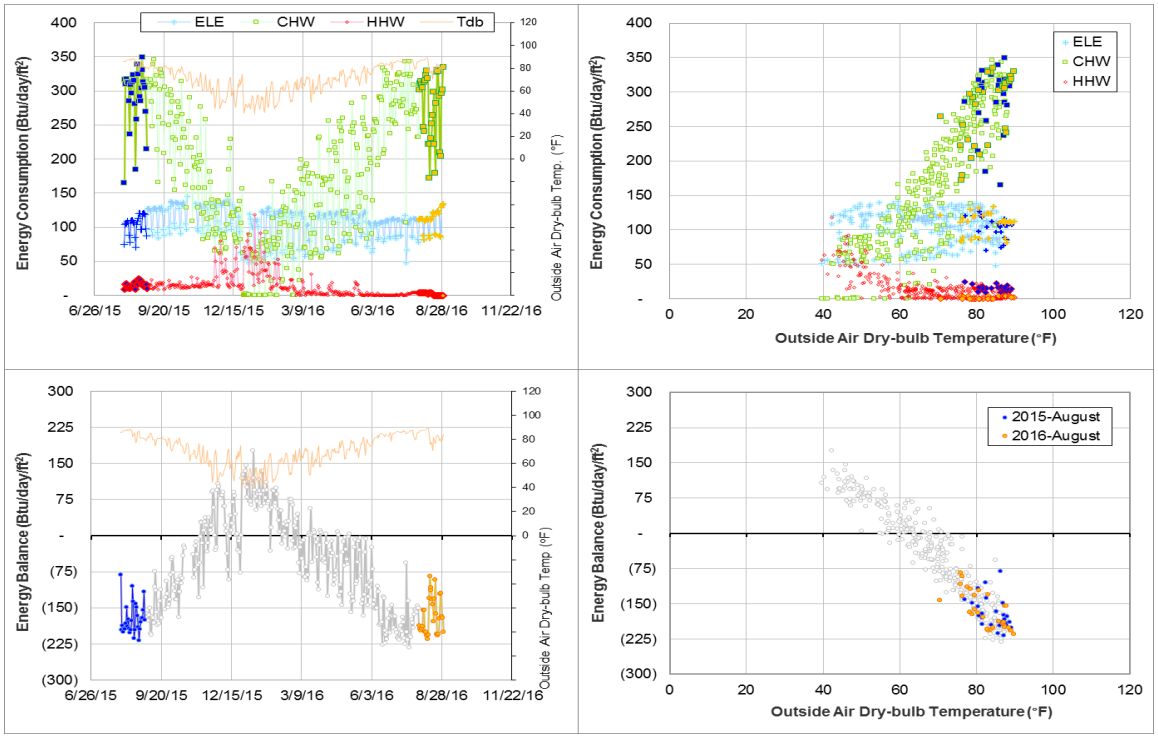
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	Drop in HHW flow.	3/2/2016 – Ongoing

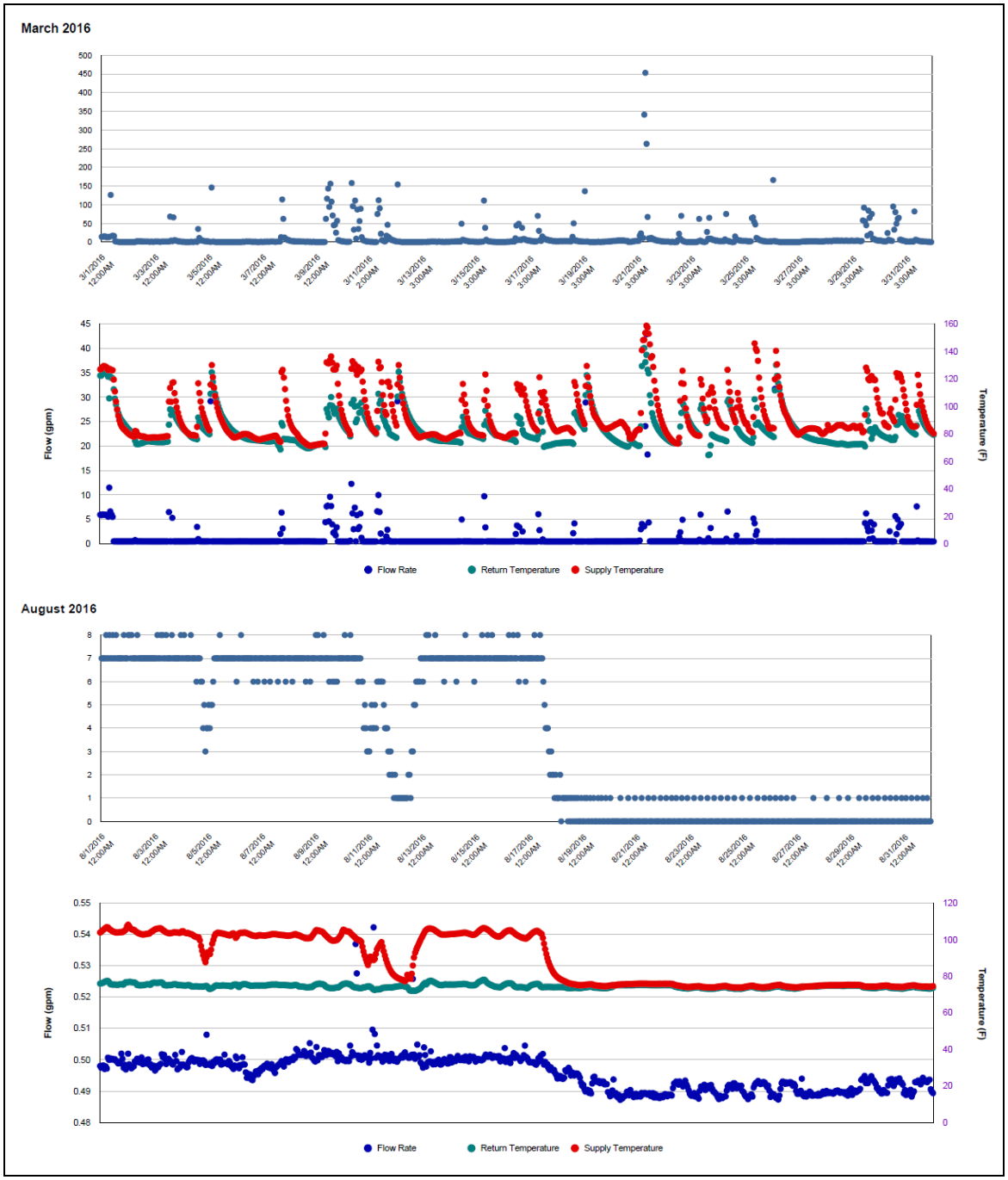
Quantitative descriptions and comments

Prior to March 2016, the HHW minimum flow ranged around 6 gpm. Starting March 2, 2016 the HHW minimum flow dropped to around 0 gpm. While HHW might not to be actually used during summer, there does appear to be consumption at this month last year.

Explanatory Figure: 13 months energy balance plot with original data.



Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from the utilities office for March 2016 (above) and August 2016 (below). The March plot shows the drop in flow around the 2nd.



Scoates Hall (TAMU Bldg #478)

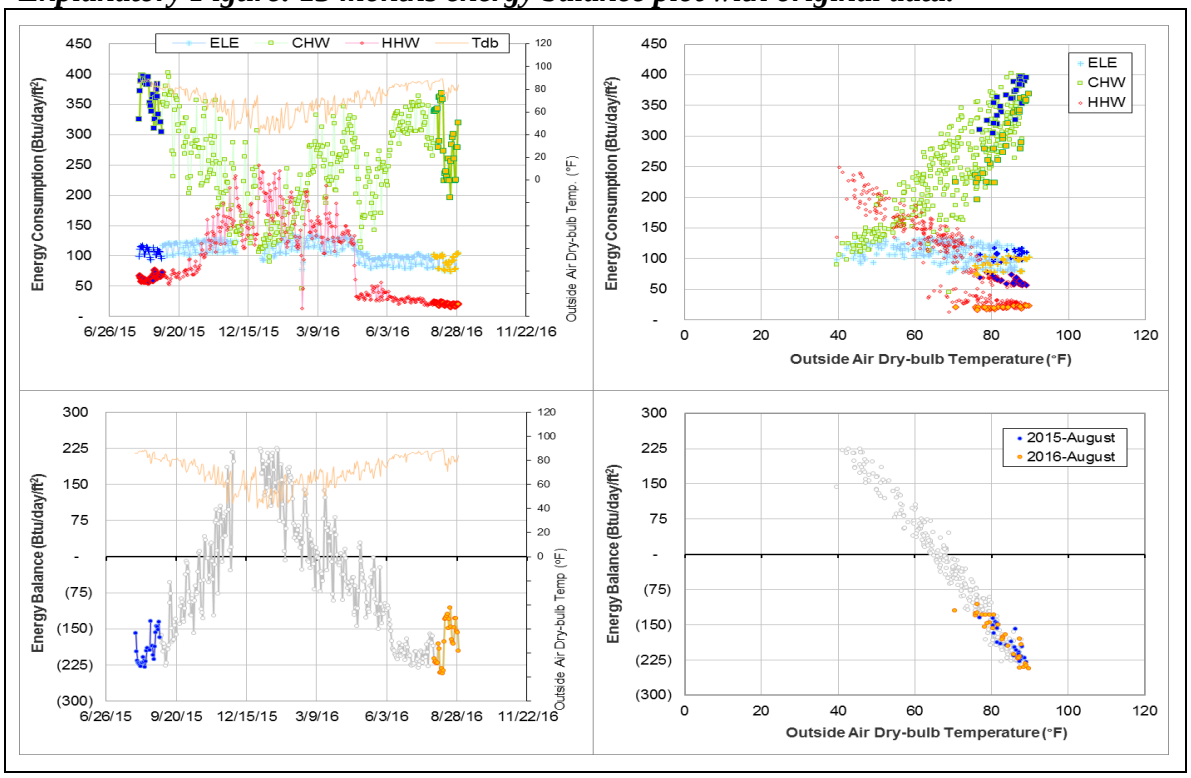
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE, CHW, and HHW	The consumption level has significantly decreased.	4/26/2016 – Ongoing

Quantitative descriptions and comments

ELE, CHW, and HHW all saw a significant decrease in consumption starting since 4/26/2016. Since the energy balance plot has retained its pattern, the drop may be due to a decrease in usage that is associated with the end of the spring semester.

Explanatory Figure: 13 months energy balance plot with original data.



Utilities & Energy Services Central Office (TAMU Bldg #496)

Detected issues in the energy balance and/or the consumption data

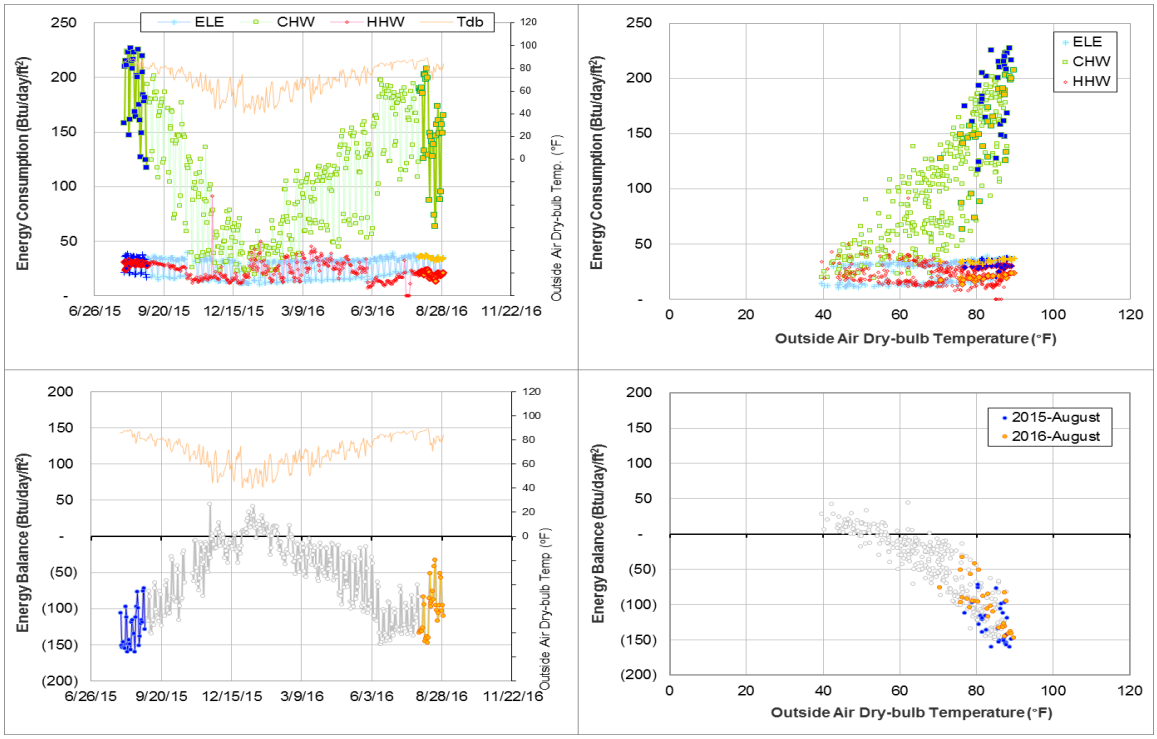
Data Type	Description of data behaviors	Period
ELE, CHW, and HHW	The energy use per unit floor area was low compared to other buildings.	Since the data became available on 7/1/2012

Quantitative descriptions and comments

The peak electricity use density was around 0.65 W/ft^2 which is small compared to that of other office buildings on campus. The delta T for HHW seemed to be small for years. The CHW and HHW consumption per the unit floor area also seemed to be low. It is possible that the GSF we have (46,110 ft^2) includes substantial unoccupied space.

The energy balance was scattered due to the consumption level changes for CHW and HHW, the cross-point temperature of the energy balance was ranged around 50 to 70°F.

Explanatory Figure: 13 months energy balance plot with original data.



Engineering Innovation Center (TAMU Bldg # 499)

Detected issues in the energy balance and/or the consumption data

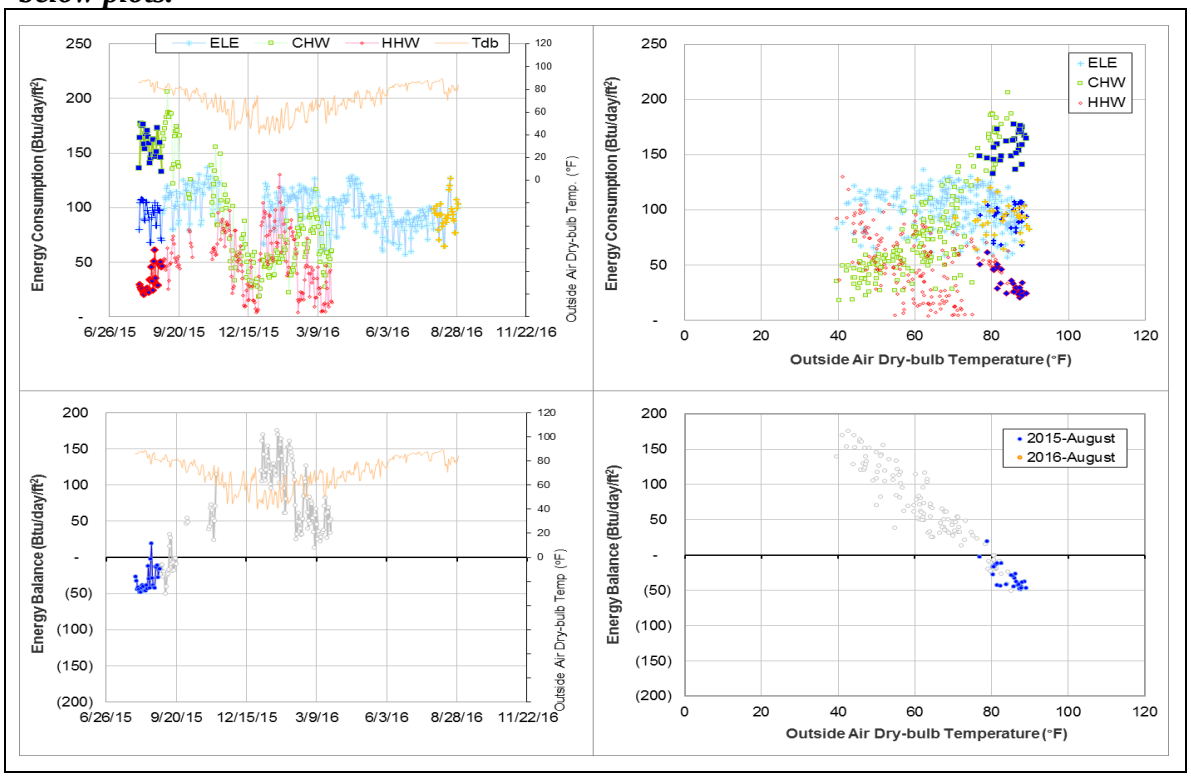
Data Type	Description of data behaviors	Period
Energy Balance	The cross-point temperature is high.	For years
CHW	The consumption level is low compared to the ELE and HHW consumption.	For years

Comments

The cross-point temperature of the energy balance is around 80°F. The CHW consumption is relatively low and its delta T is always small.

CHW and HHW meter data has been missing since April 2016.

Explanatory Figure: 13 months energy balance plot with original data. CHW and HHW data is not available for the months of April – August and do not appear in the below plots.



Nagle Hall (TAMU Bldg #506)

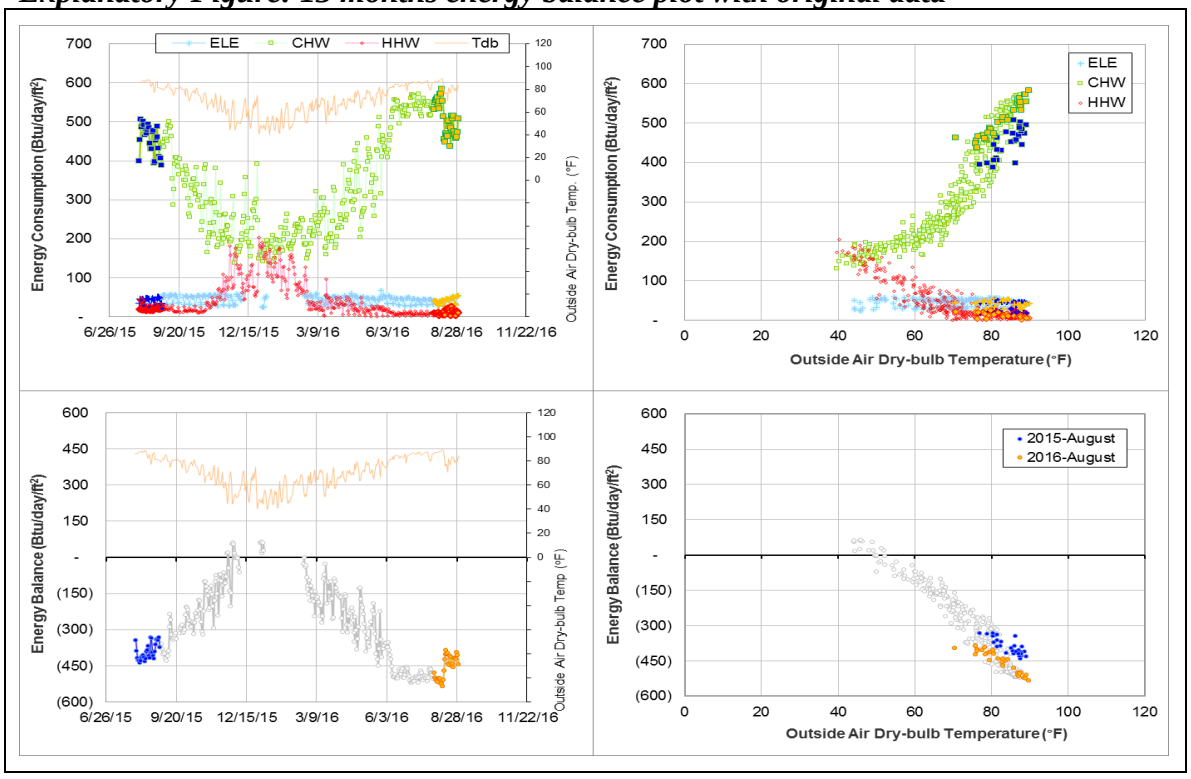
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The level was low and the cross-point temperature was around 50°F.	The cross-point temperature has always been low.
ELE	The consumption per unit floor area was smaller than those for other office buildings.	The level was always low and gradually decreased over the past 4 years.

Comments

The ELE consumption was about 100 Btu/day/ft^2 lower than the levels in typical office buildings on campus, and this might be a metering error or this meter might not cover the whole building.

Explanatory Figure: 13 months energy balance plot with original data



Beutel Health Center (TAMU Bldg #520)

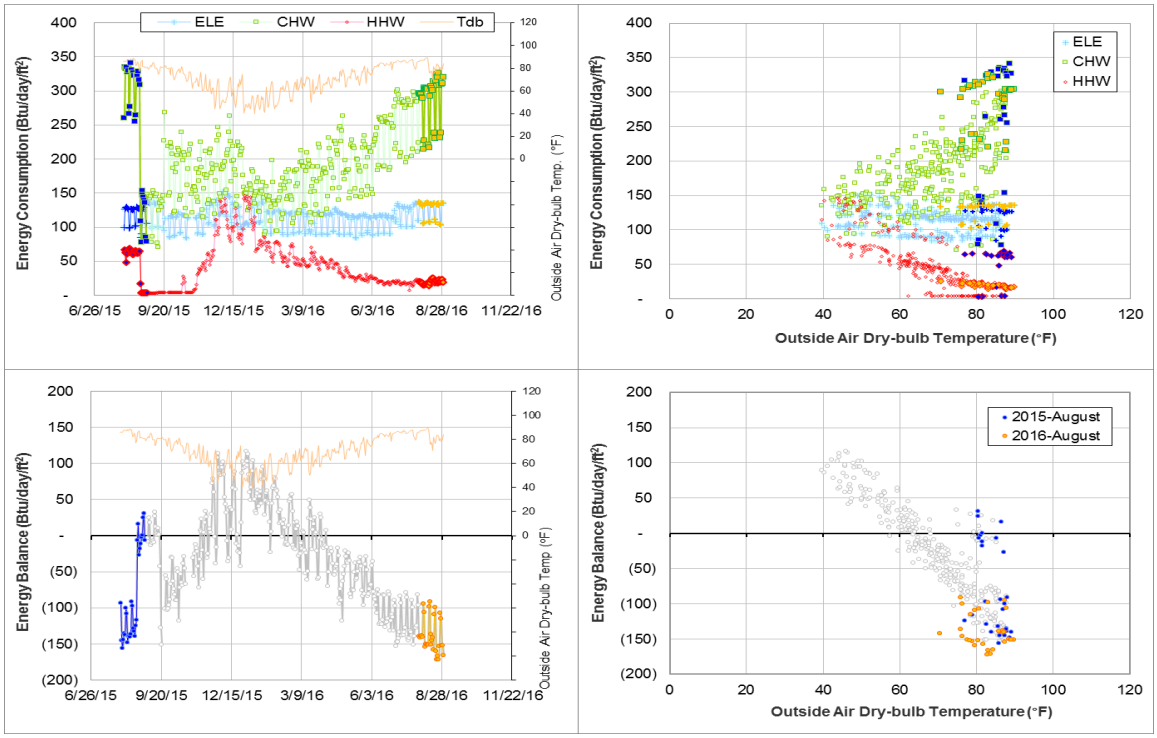
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	ELE consumption level increased.	7/2/2016 – Ongoing

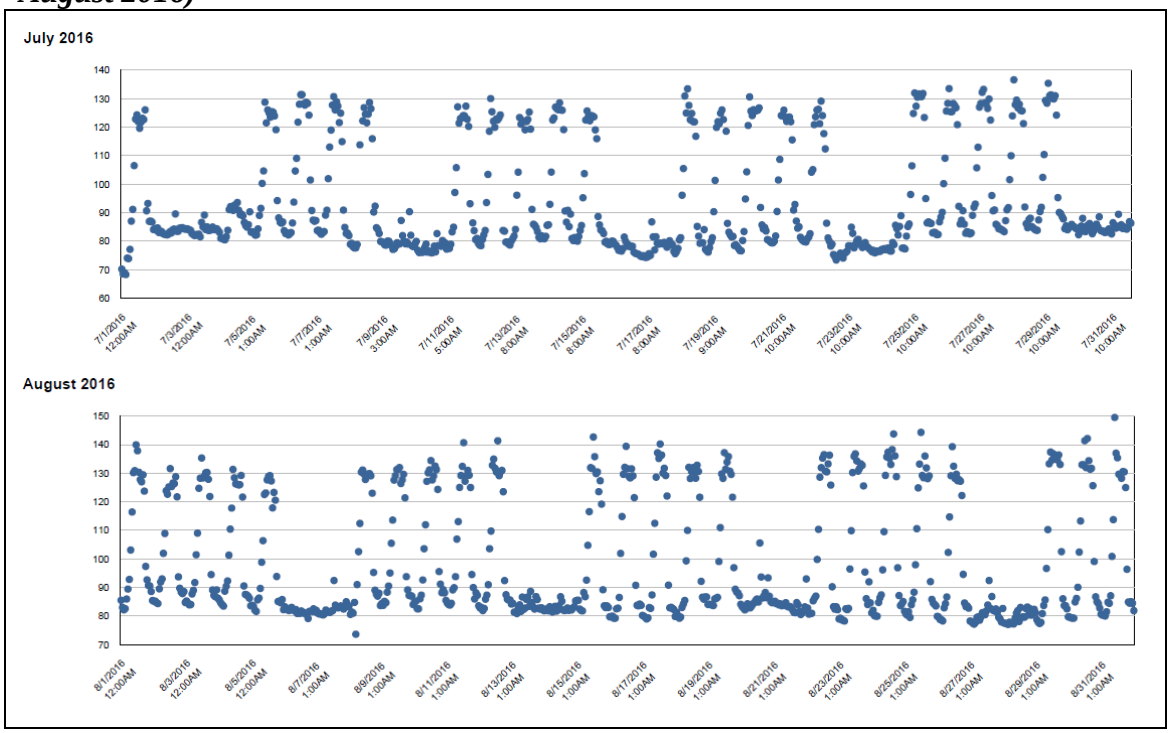
Comments

The ELE consumption seems to have increased around 7/2/2016. The building's base electrical load increased from 70 kW in June to 80 kW in July and continues to hold this pattern.

Explanatory Figure: 13 months energy balance plot with original data



Explanatory Figure: Time series plots of hourly ELE energy consumption from the utilities office. The increase can be seen around 7/2/2016. (top: July 2016, bottom: August 2016)



Blocker Building (TAMU Bldg #524)

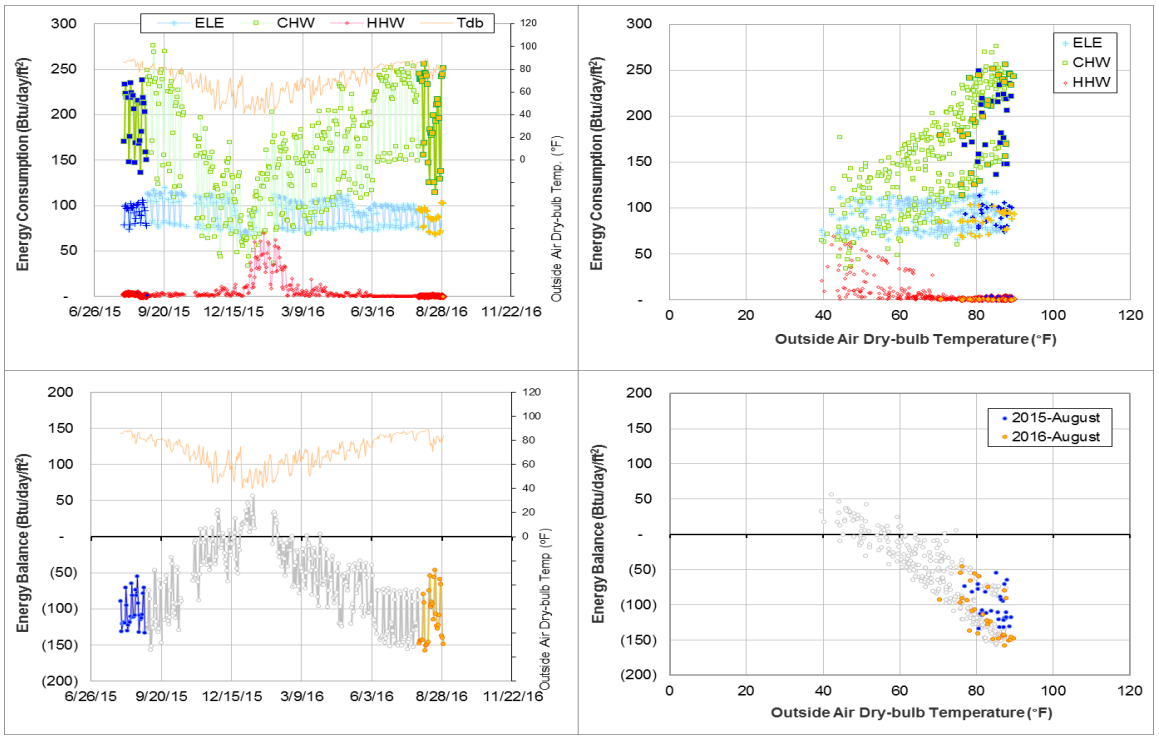
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	The consumption level might be low.	Past several years

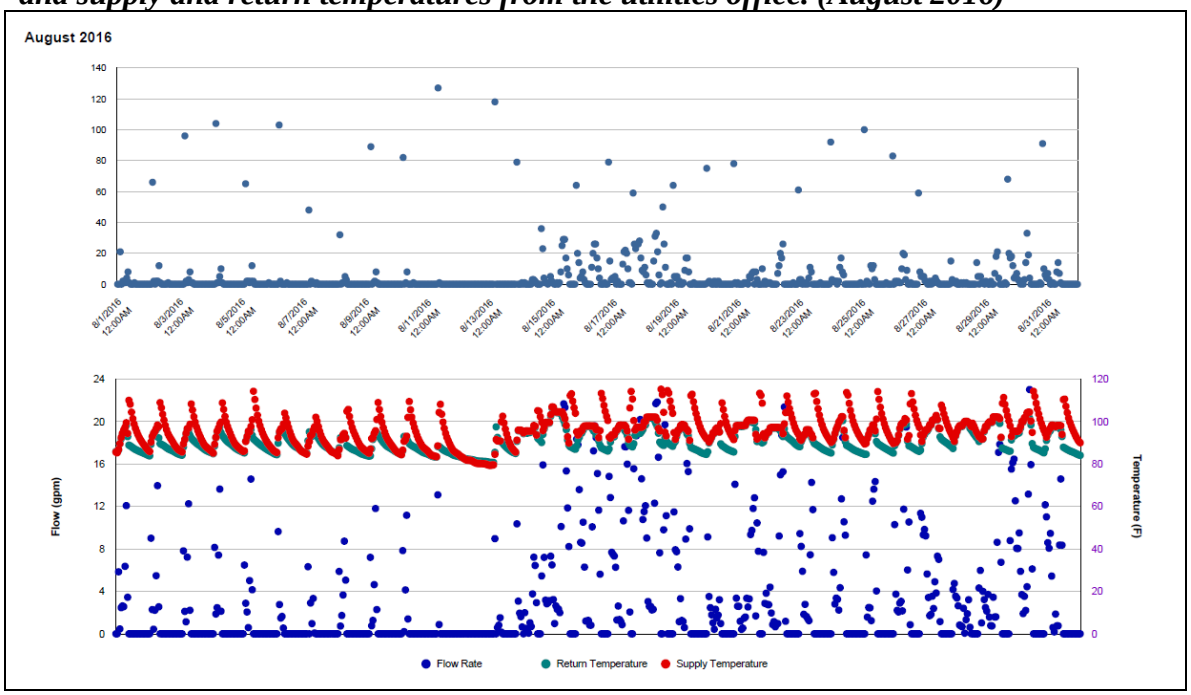
Quantitative descriptions and comments

The delta T and consumption level for HHW seems low for the past couple of years.

Explanatory Figure: 13 months energy balance plot with original data



Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from the utilities office. (August 2016)



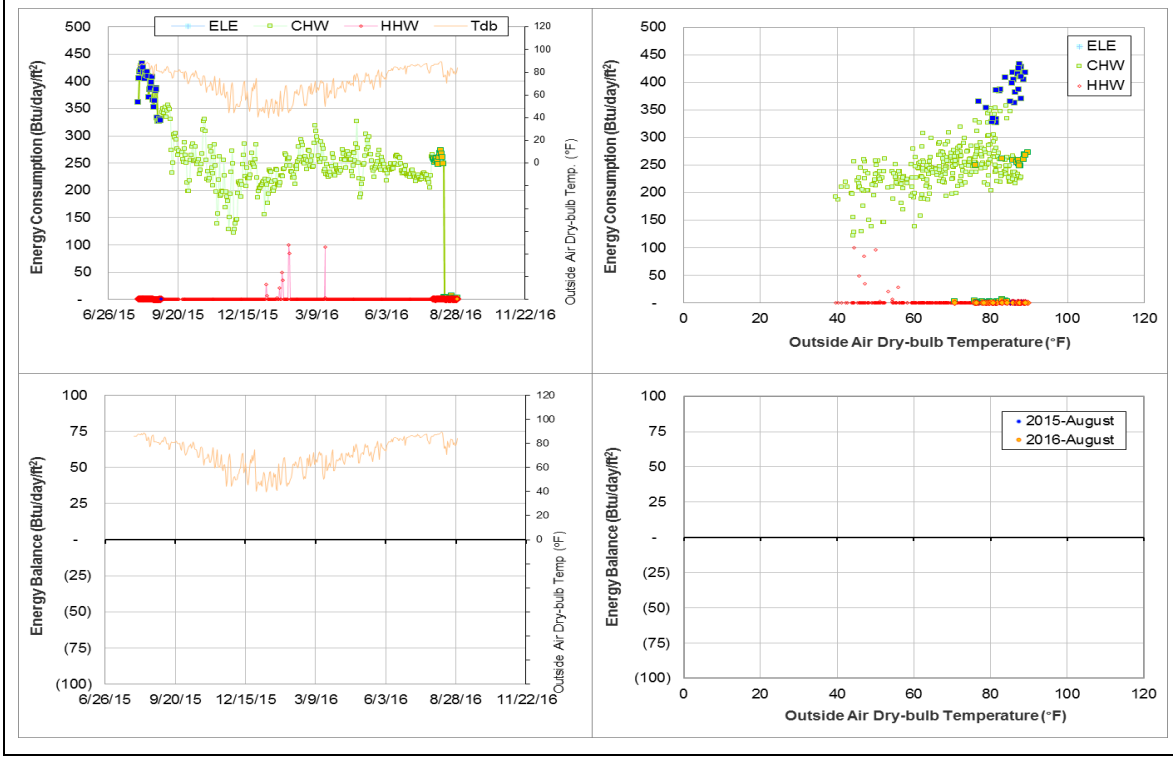
TVMC-Small Animal Building (TAMU Bldg# 880)

Data Type	Description of data behaviors	Period
HHW	The daily consumption is zero or nearly zero for the majority of the days during the year.	Since the data became available in October 2008

Comments

The daily HHW consumption pattern is zero or nearly zero for the majority of the days for years. Because the HHW consumption level appears unstable since the data became available, a valid consumption model for this meter has not been created.

Explanatory Figure: 13 months energy balance plot with original data



Veterinary Medicine Administration (TAMU Bldg# 1026)

Detected issues in the energy balance and/or the consumption data

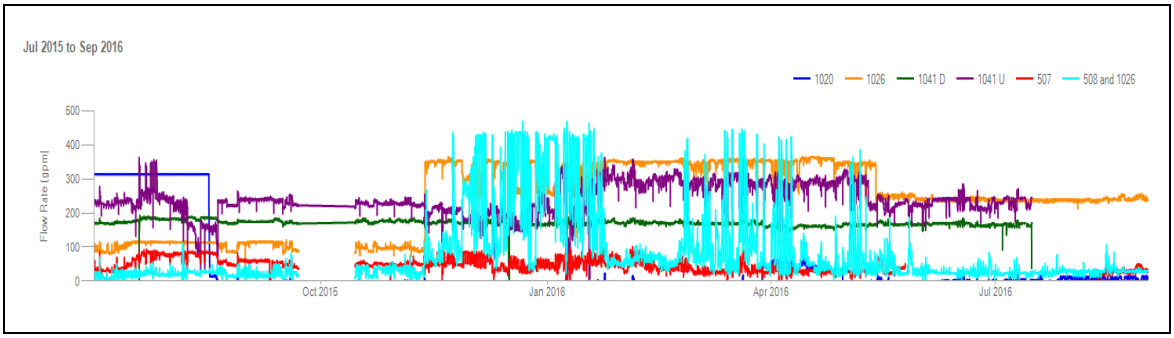
Data Type	Description of data behaviors	Period
HHW 006053	The sub-meter's (006053) flow rate for one building sometimes is higher than the total meter (004170) for two buildings.	For several years

Comments

The HHW meter ID 006053 is a sub-meter of the meter ID 004170 which meters the total energy use in the buildings #508 and 1026. It is questionable that the flow rate of the sub-meter exceeds the flow rate of the main meter. We would like to know the HHW distribution route for the two buildings and the locations of the sensors.

ESL has not received the consumption data for the HHW meter since 10/21/2012.

Explanatory Figure: Time series of hourly HHW flow rates for Veterinary Medicine Administration (Bldg #1026) and neighboring buildings during 7/1/2015–8/1/2016. The combined HHW metered for Bldg #1026 and #508 (light blue) is lower than the standalone HHW meter for only Bldg #1026 (dark blue).



Biological Control Facility (TAMU Bldg# 1146)

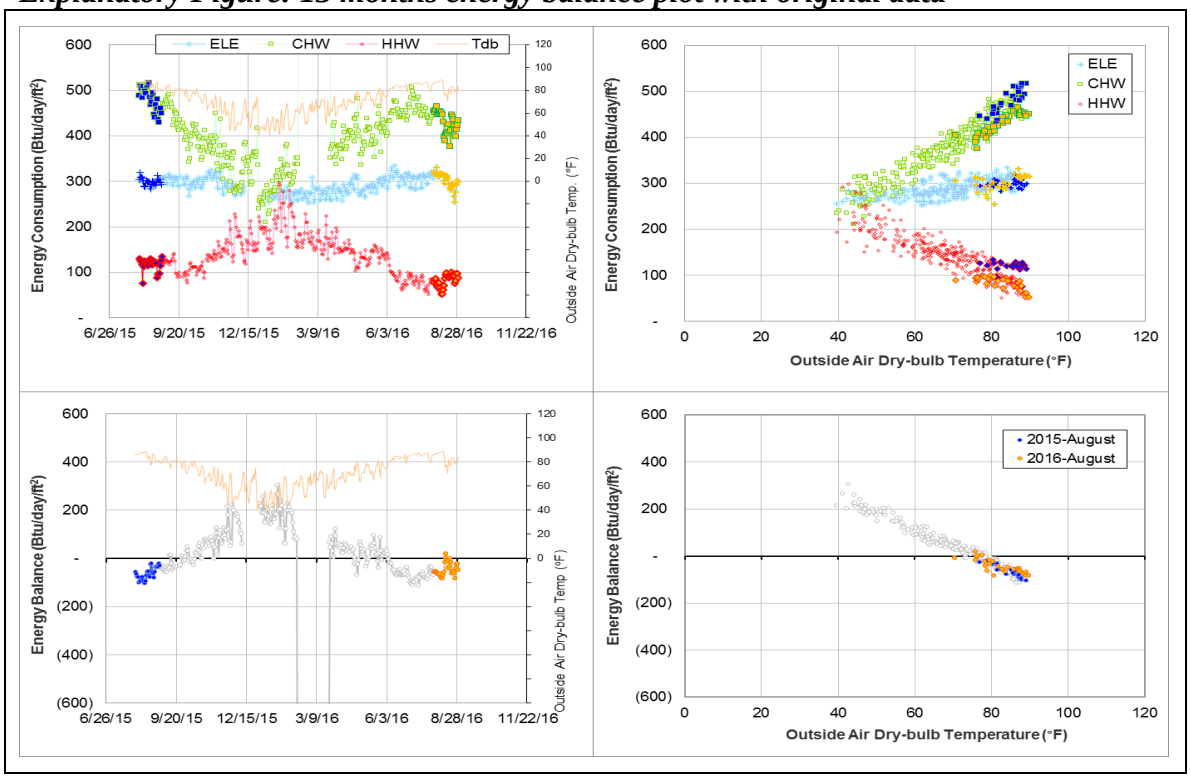
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The cross-point temperature is slightly high, ~75°F.	12/28/2014-ongoing
ELE	The consumption increased gradually.	For several years

Comments

The electricity consumption increased gradually over several years. As a result, the energy balance pattern changed and the cross-point temperature shifted slightly higher from approximately 70˚F to 75˚F.

Explanatory Figure: 13 months energy balance plot with original data



Physical Plant Administration & Shops (TAMU Bldg# 1156)

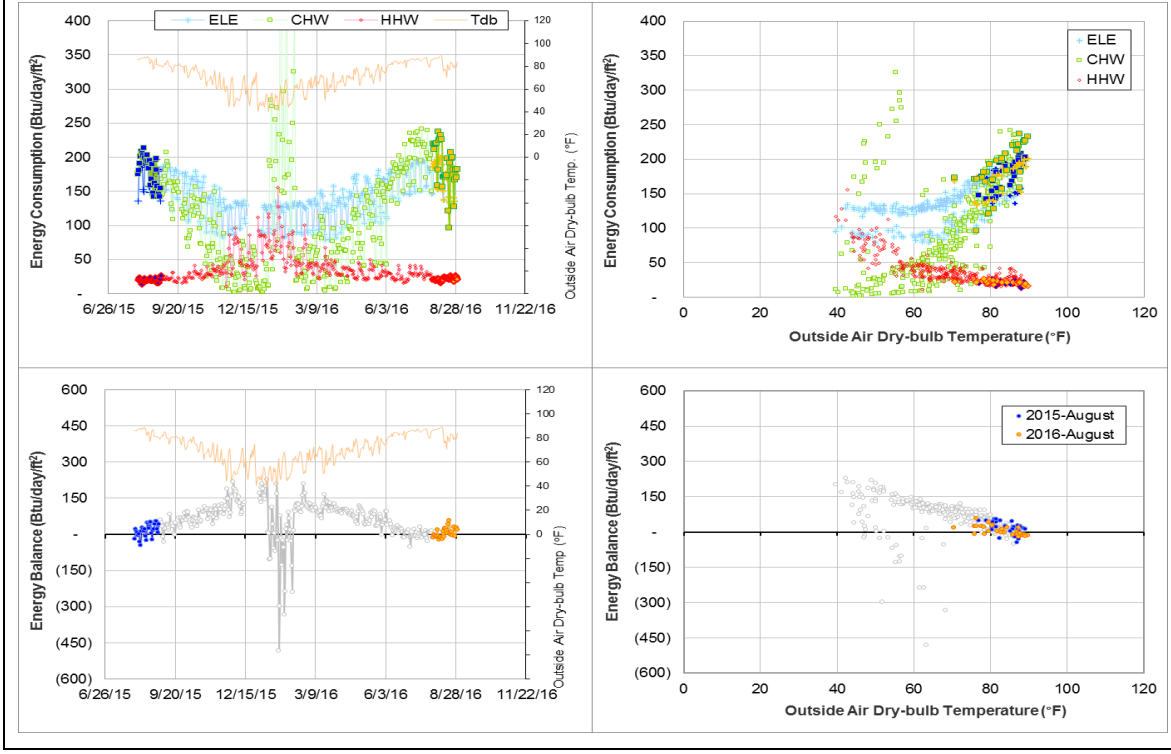
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The cross-point temperature is high, ~85°F.	7/1/2014-ongoing
CHW	The consumption level might be low compared to the ELE and HHW use level.	Since the data became available on 7/1/2012.

Comments

The electricity is not available until 7/1/2014. CHW consumption level might be low compared to the ELE and HHW use level. But the CHW consumption level has been stable since the data became available on 7/1/2012. More information might be needed to help identify which type energy causes the high cross-point temperature.

Explanatory Figure: 13 months energy balance plot with original data



Veterinary Research Building (TAMU Bldg# 1197)

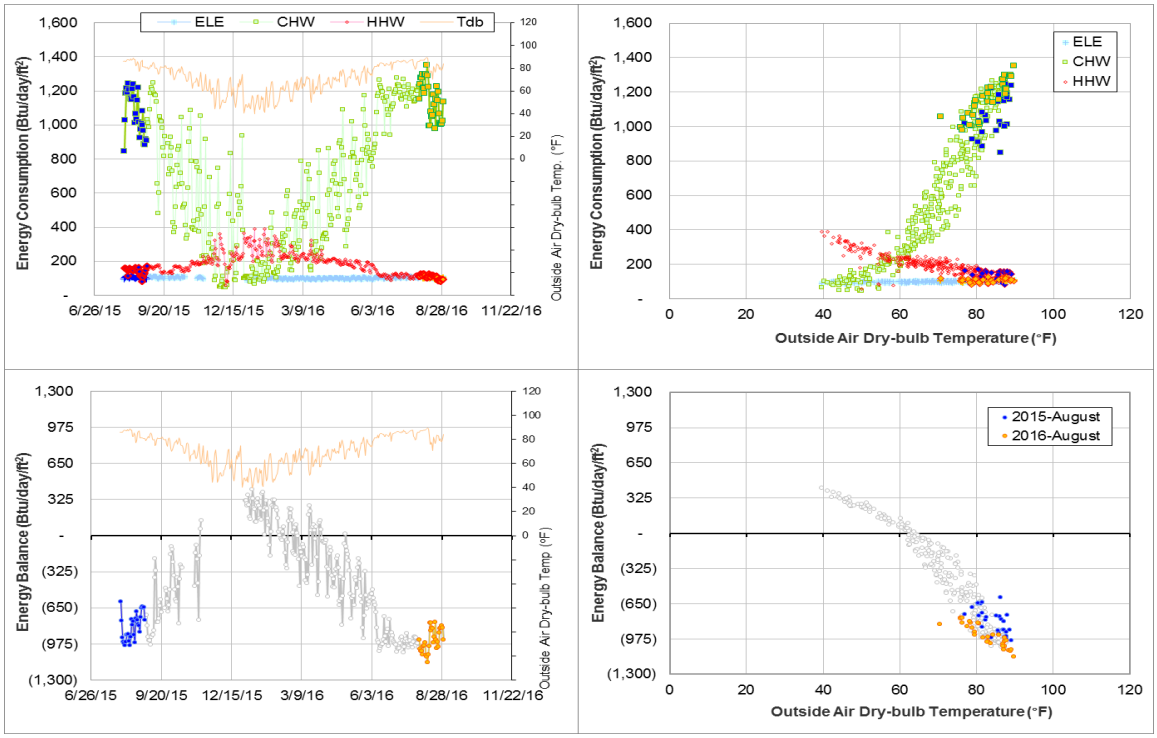
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The consumption is low for a laboratory building.	Since January 2010 when the meter was added to this report

Comments

The whole building hourly electricity use is in the range 130 kWh to 180 kWh (1.13 W/ft^2 to 1.57 W/ft^2), which is low for a veterinary laboratory building on the campus. This seems to be the reason for the low level of the energy balance load. The temperature-axis intercept of the energy balance is around 62°F.

Explanatory Figure: 13 months energy balance plot with original data



Kleberg Center (TAMU Bldg #1501)

Detected issues in the energy balance and/or the consumption data

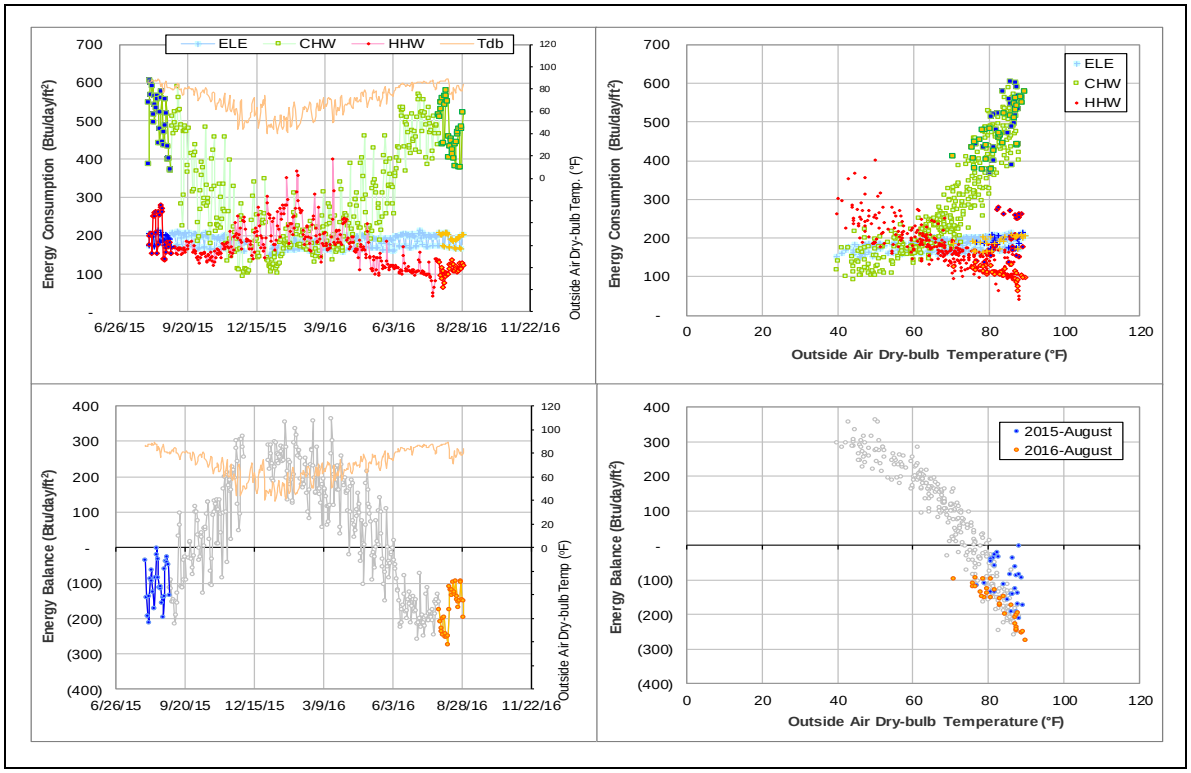
Data Type	Description of data behaviors	Period
CHW	The return temperatures is high. Delta-T is bigger than that for similar buildings in campus.	Since we started to analysis this building in 2006.

Comments

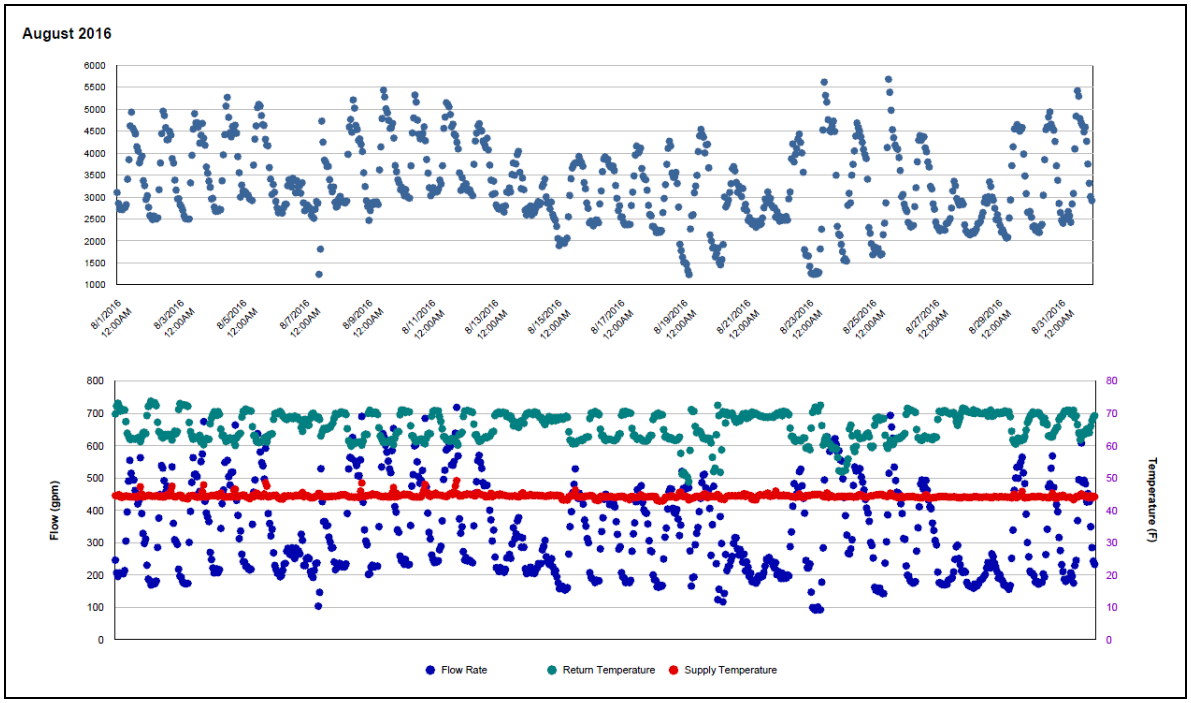
The return temperature for CHW meter was high, about 60 - 70°F for years. The return temperature increased further on 11/13/2014 and it reached 80°F sometimes. Delta-T for this building (25 - 35°F) is much bigger than that for similar buildings in campus.

The ESCO period for this building is 5/1/2011-1/1/2012. The CHW consumption level has been stable for over three years after ESCO period.

Explanatory Figure: 13 months energy balance plot with original data



Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office (CHW during August 2016)



International Ocean Discovery Building (TAMU Bldg #1601)

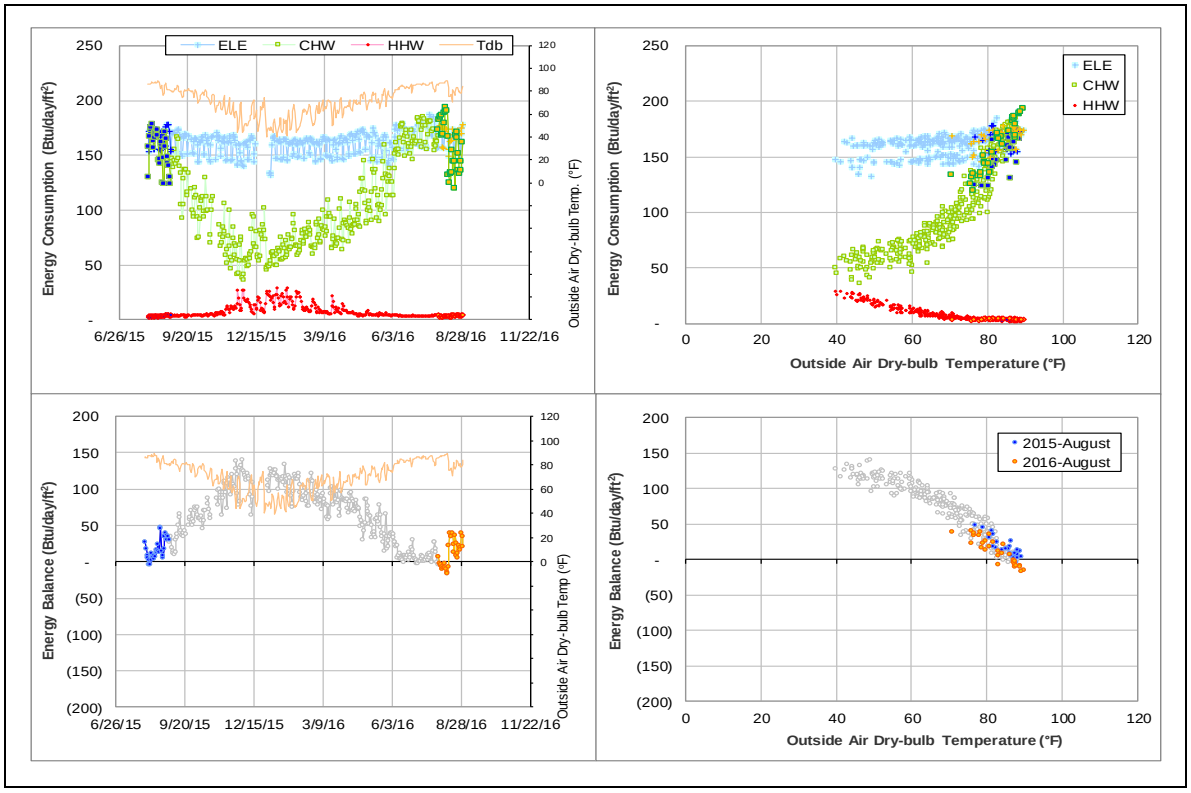
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The cross-point is high, around 85°F.	Since data became available in Feb 2015

Comments

The cross-point temperature is high for this building, around 85°F. The daily CHW consumption for last year is 40 – 180 Btu/day/ft^2. The CHW consumption level is low compared to ELE and HHW levels. This building might have its chillers.

Explanatory Figure: 13 months energy balance plot with original data



Offshore Technology Research Center (TAMU Bldg #1604)

Detected issues in the energy balance and/or the consumption data

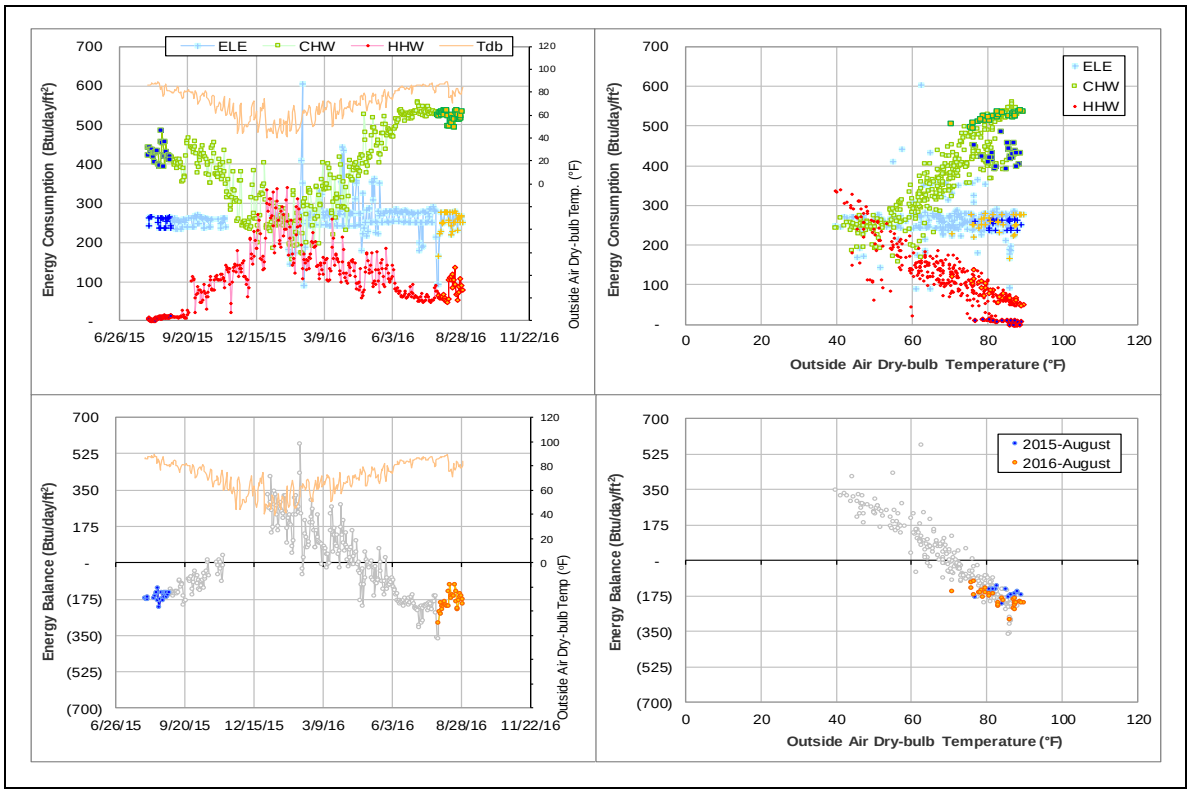
Data Type	Description of data behaviors	Period
ELE (006660)	The daily consumption was recorded as zero for the majority of the days.	Since data became available in Feb 2015
CHW and HHW	The consumption level is higher than that of last year.	5/1/2016-ongoing

Comments

Both CHW and HHW consumption level is higher than that of last year in this month.

There are two ELE meters (006659 and 006660). The daily consumption for MeterID 006660 was recorded as zero for the majority of the days since data became available in February 2015. The daily consumption for several days in recent several months increased largely and caused scattering energy balance.

Explanatory Figure: 13 months energy balance plot with original data



III. Time Series Plots for August 2016 Consumption

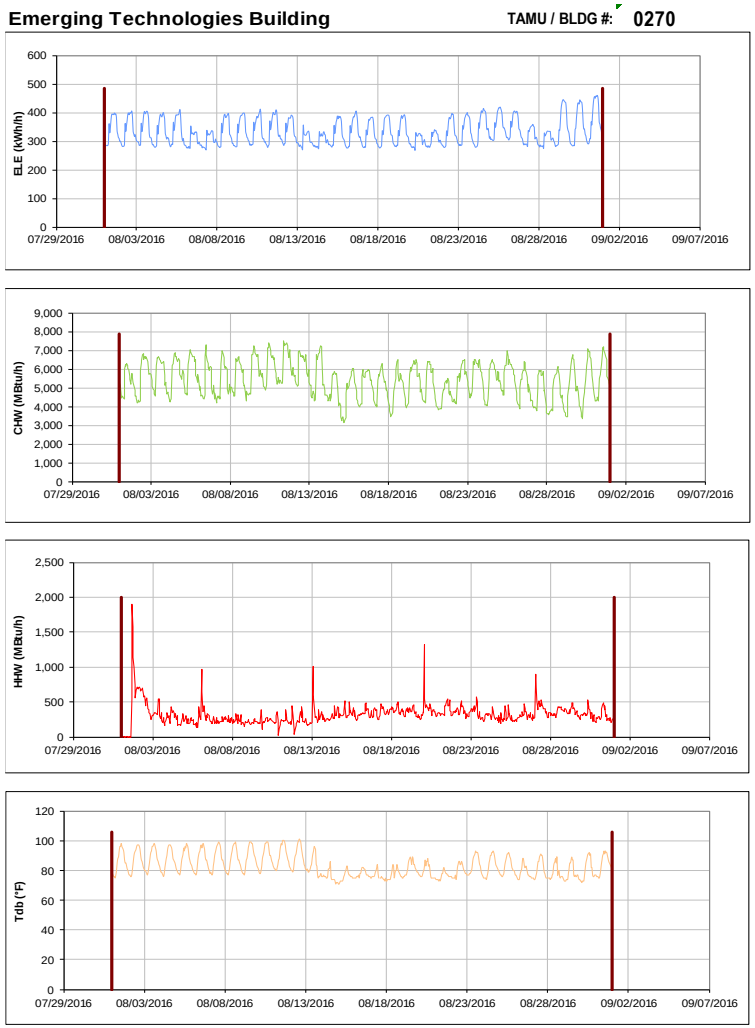


Figure III-1 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Emerging Technologies Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

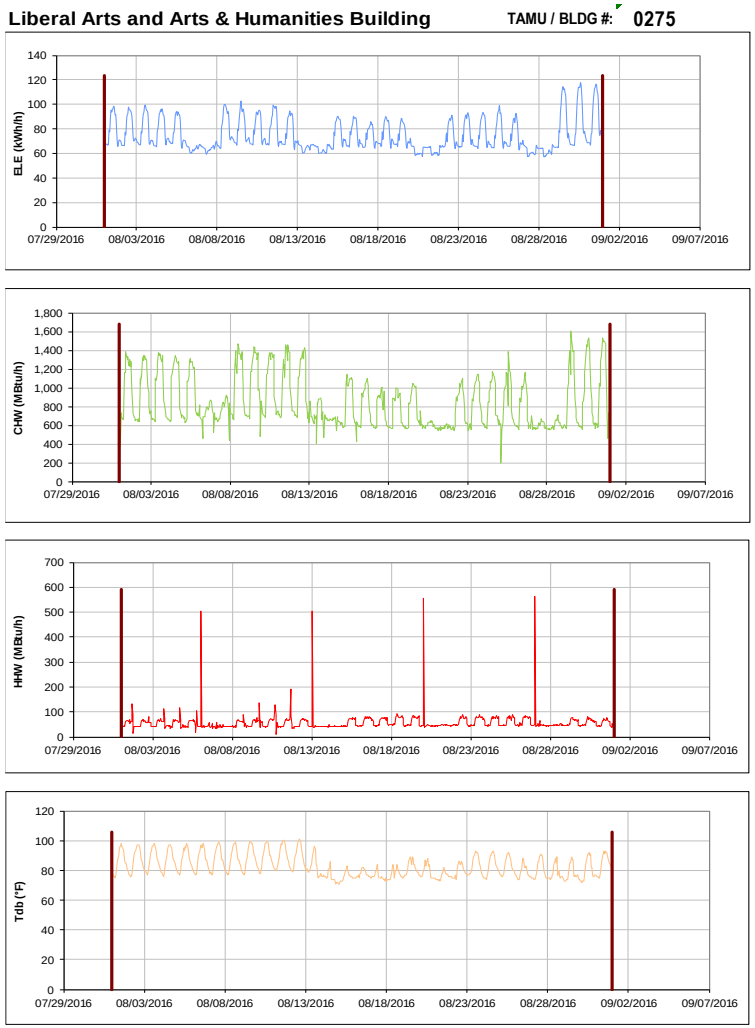


Figure III-2 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Liberal Arts and Arts & Humanities Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

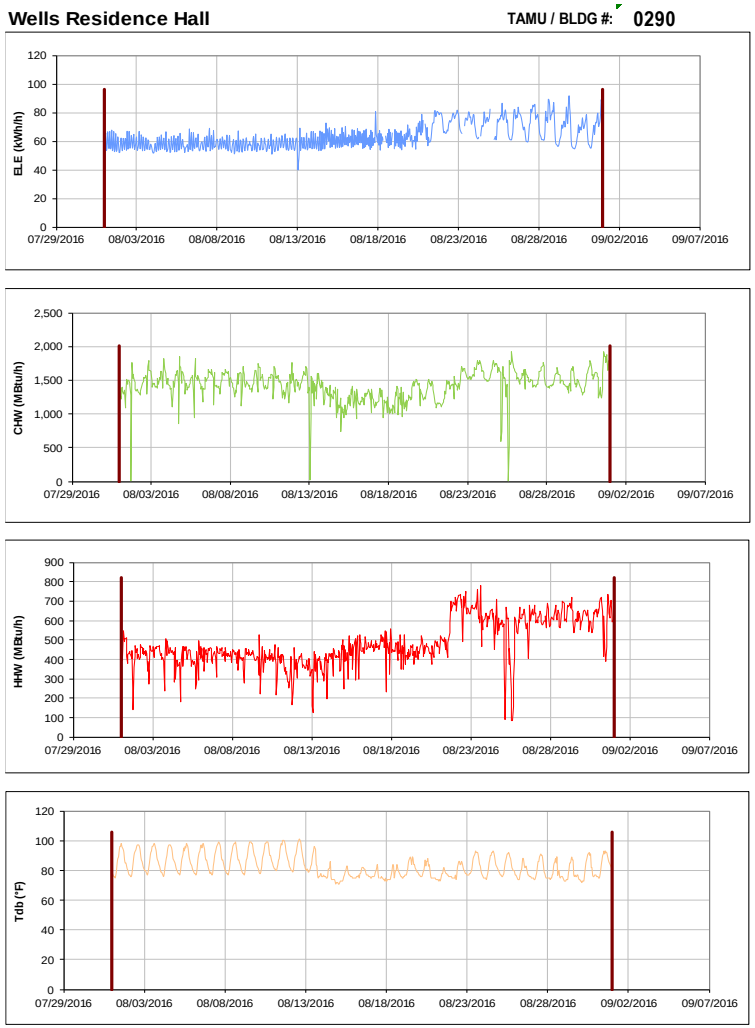


Figure III-3 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wells Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

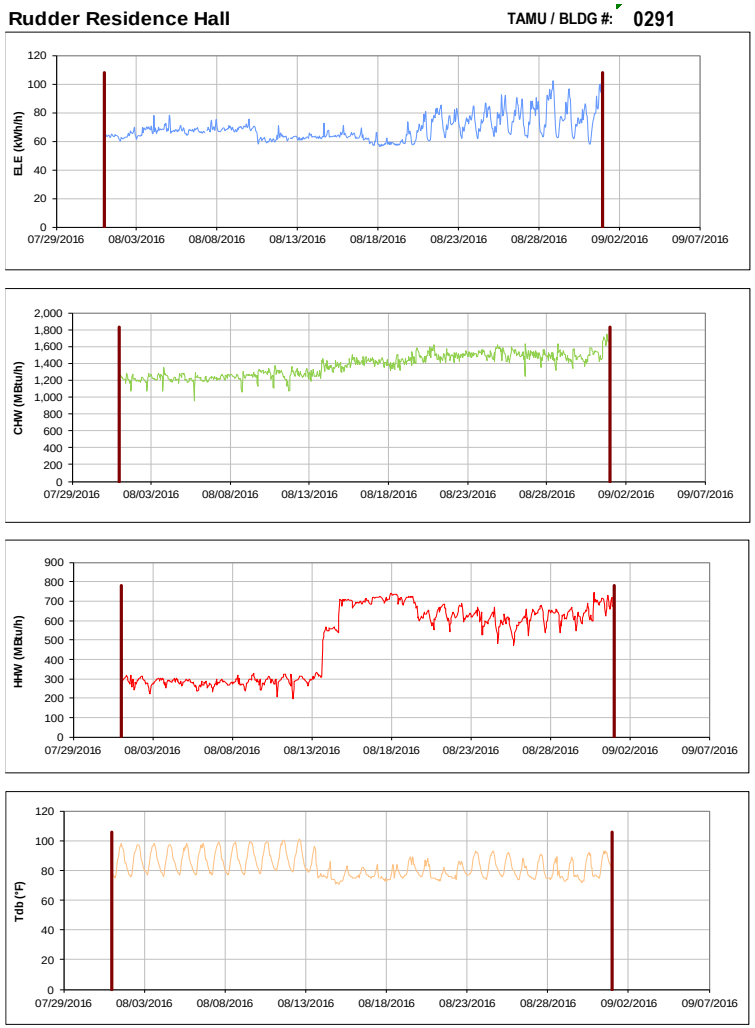


Figure III-4 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

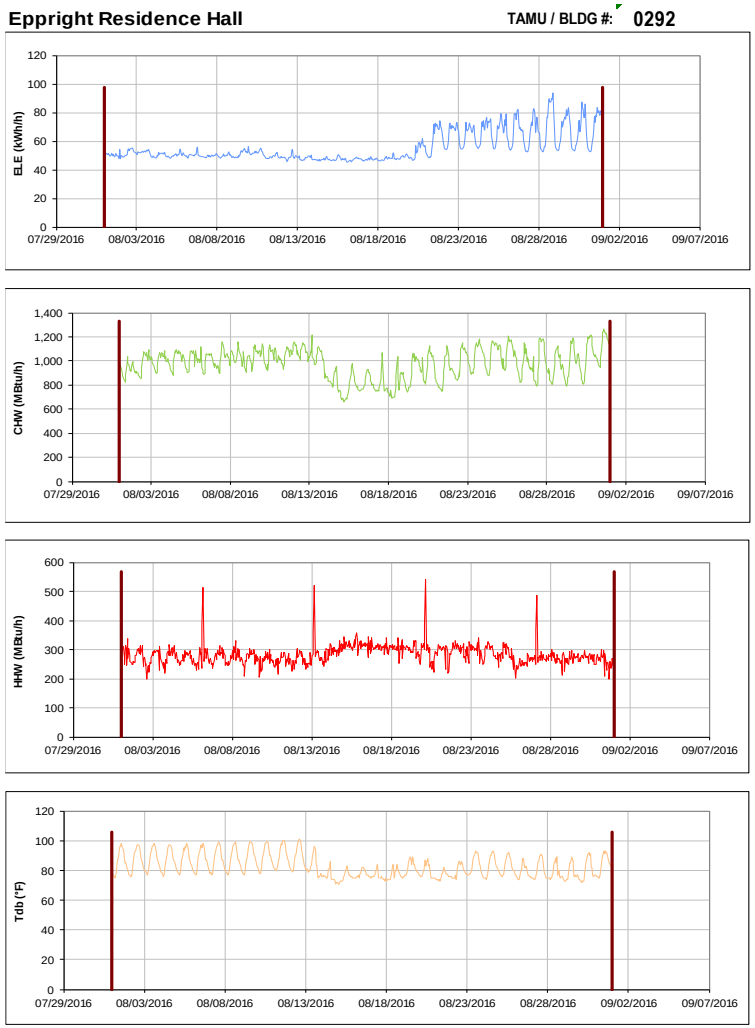


Figure III-5 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Eppright Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

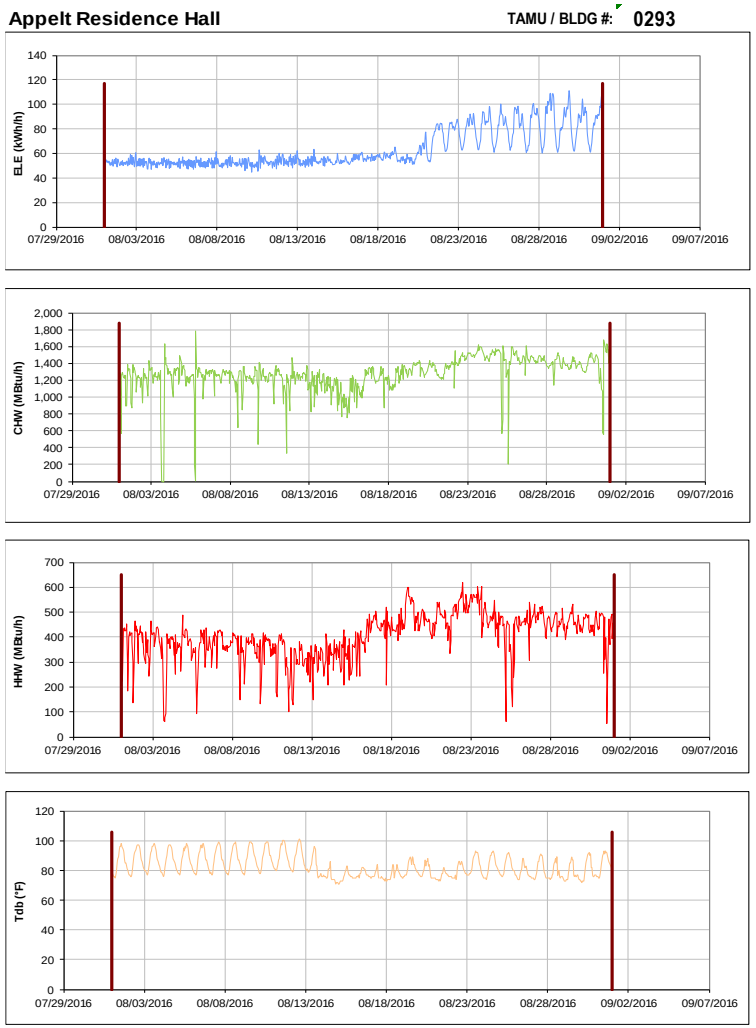


Figure III-6 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Appelt Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

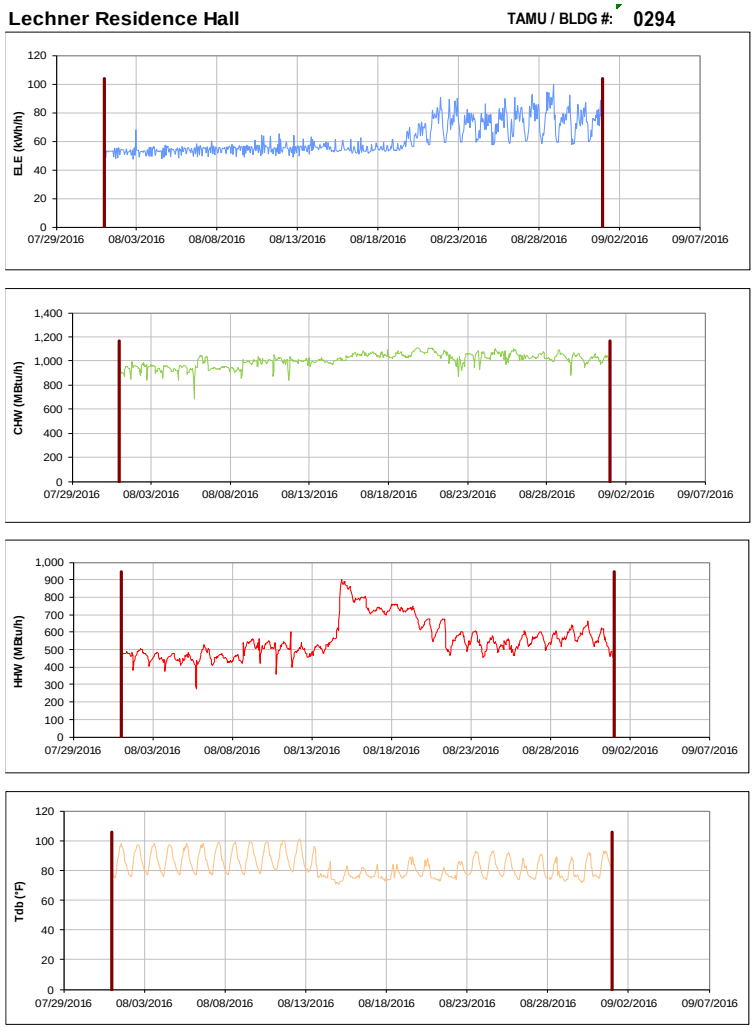


Figure III-7 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lechner Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Figure III-8 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mitchell Inst. for Fundamental Phys & Astronomy during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

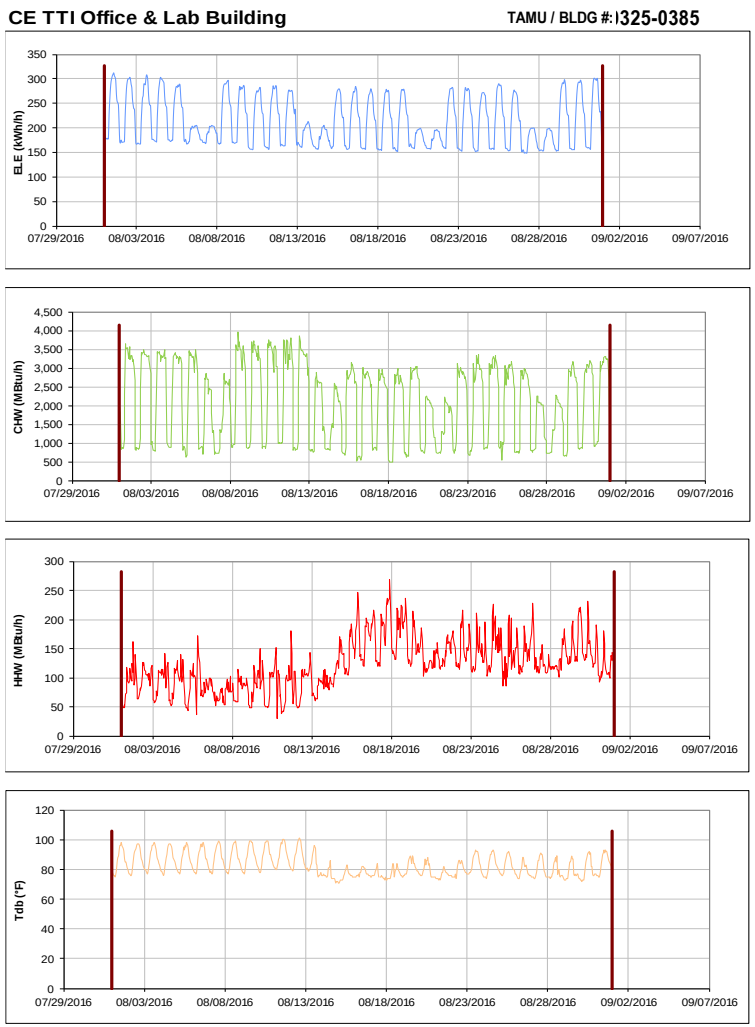


Figure III-9 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for CE TTI Office & Lab Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

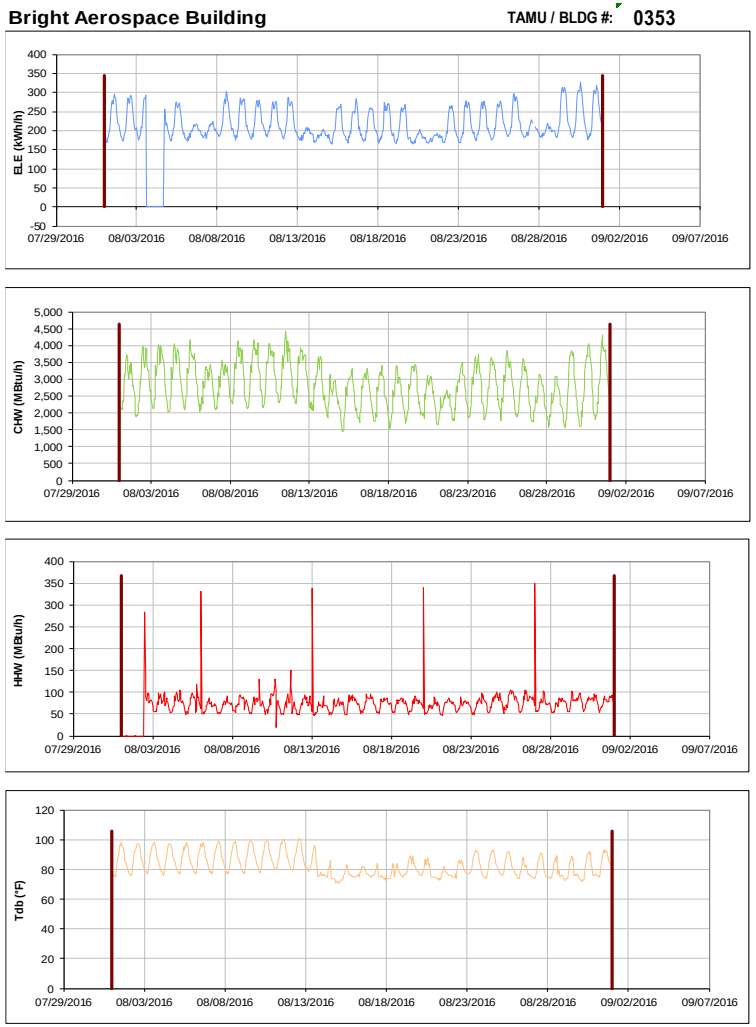


Figure III-10 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bright Aerospace Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

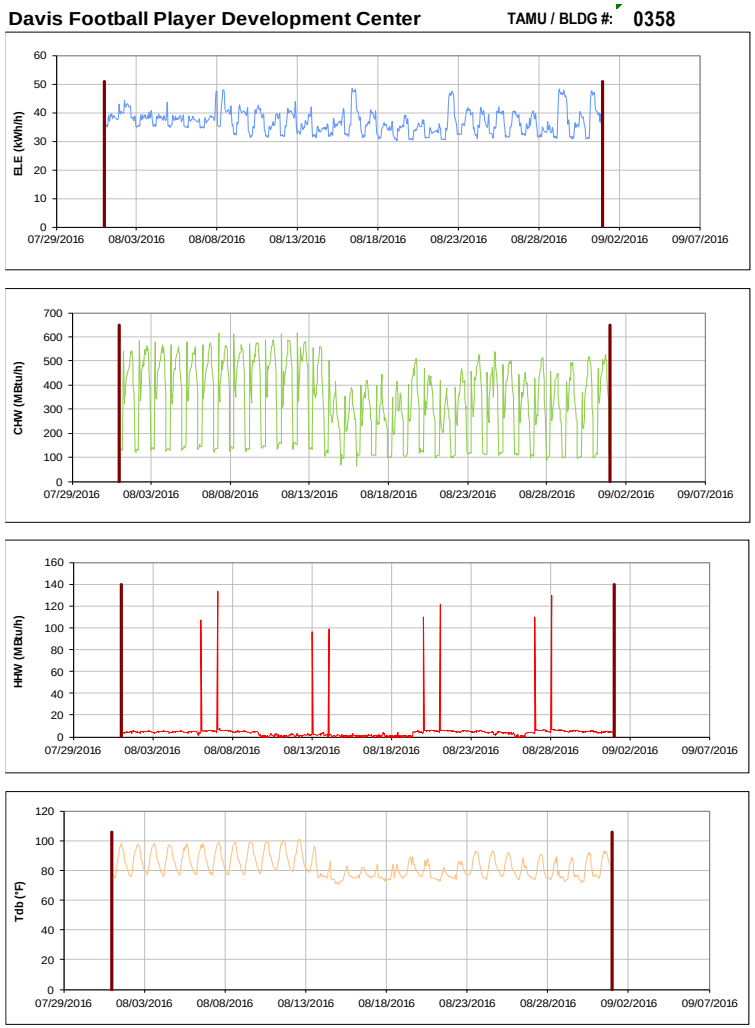


Figure III-11 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Davis Football Player Development Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

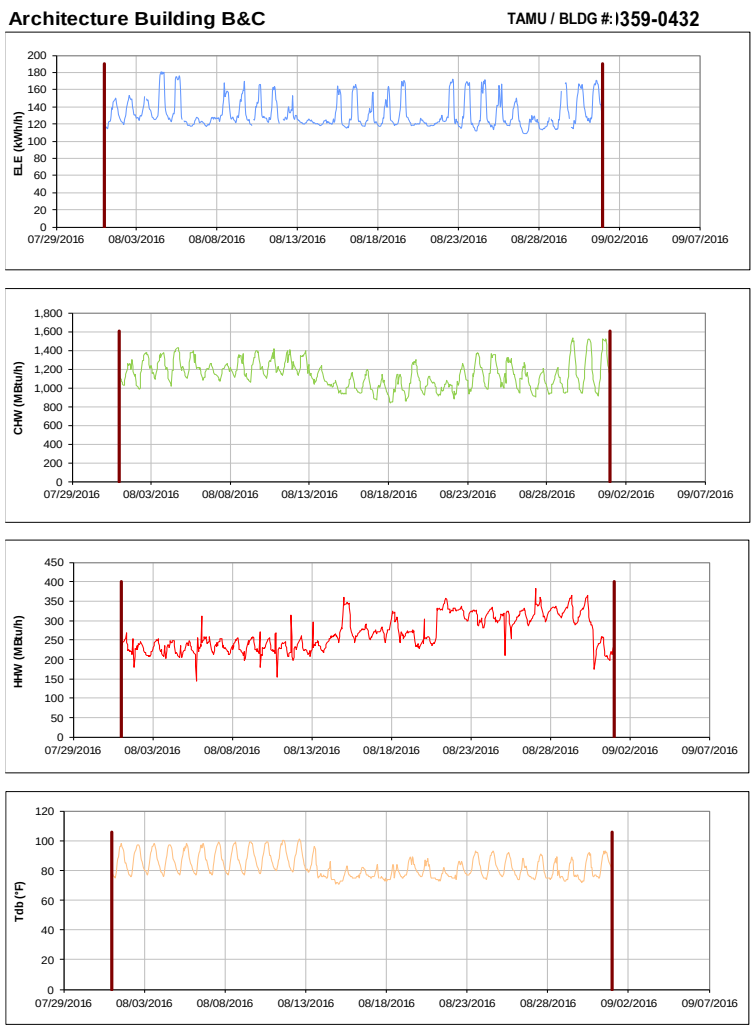


Figure III-12 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building B&C during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

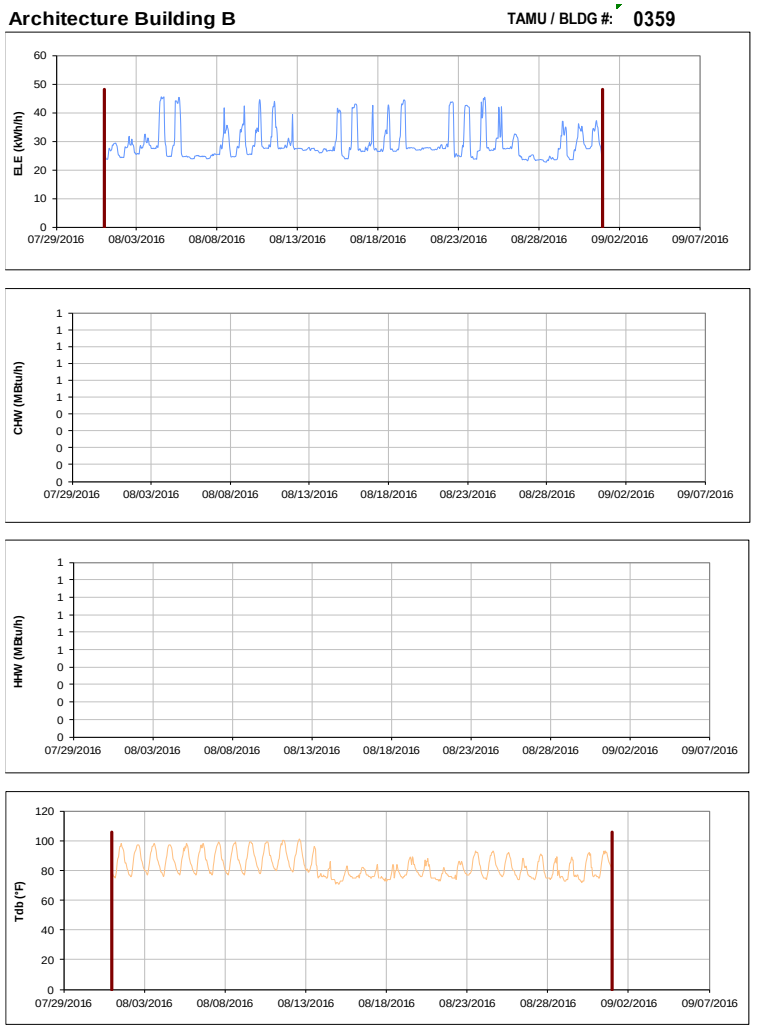


Figure III-13 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building B during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

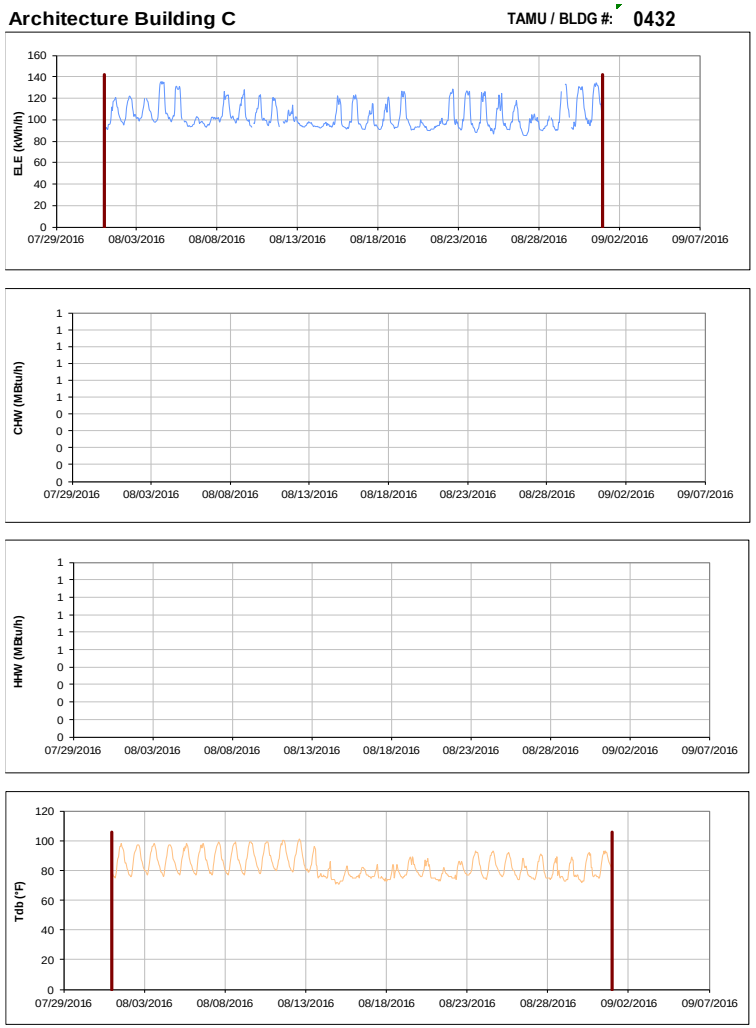


Figure III-14 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building C during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

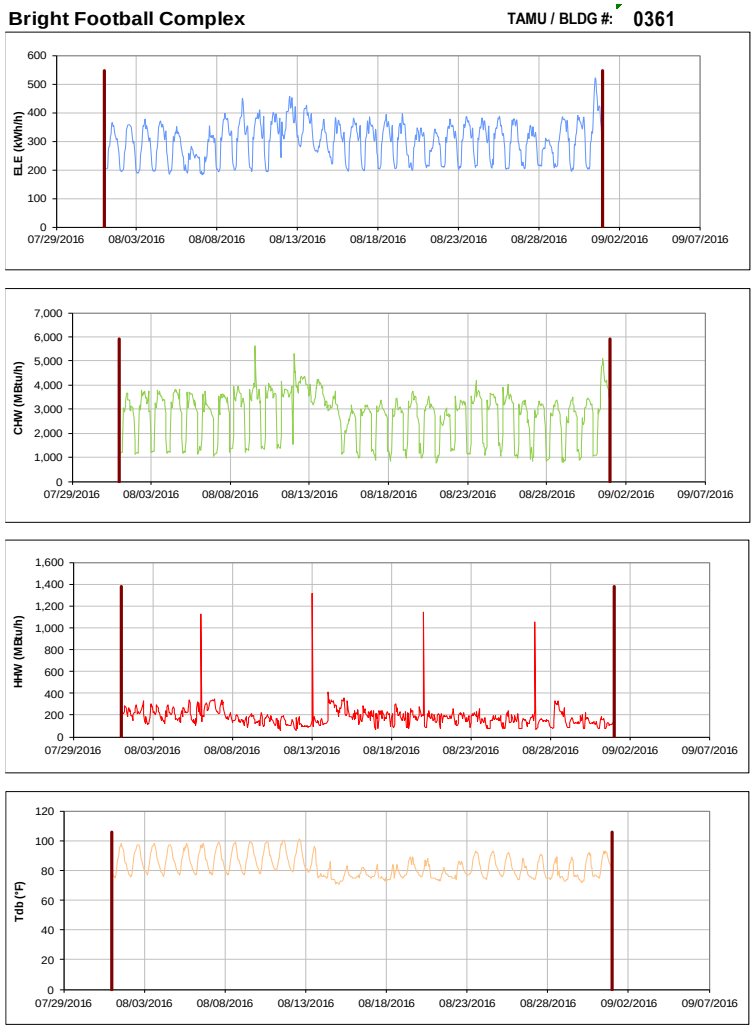


Figure III-15 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bright Football Complex during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

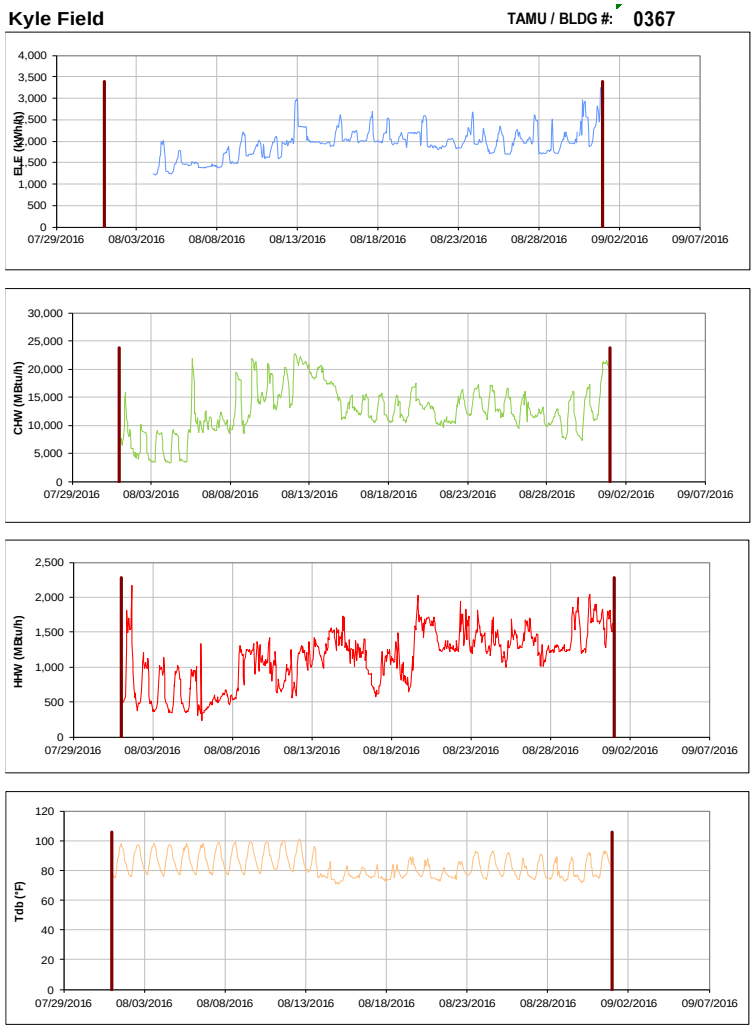


Figure III-16 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kyle Field during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

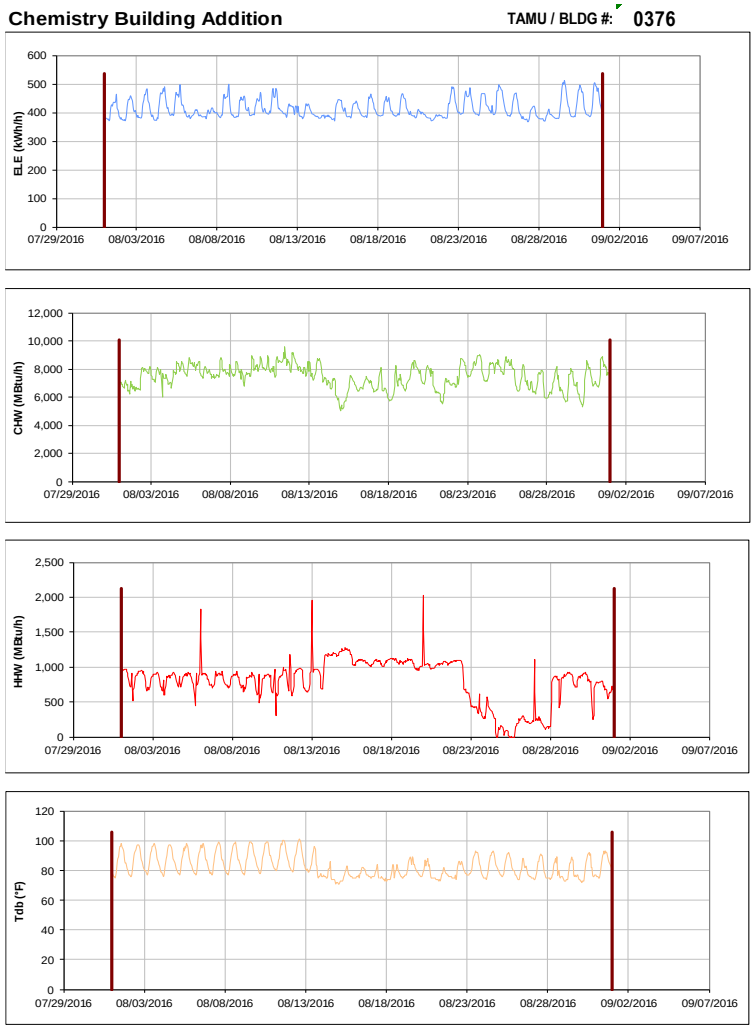


Figure III-17 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Chemistry Building Addition during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

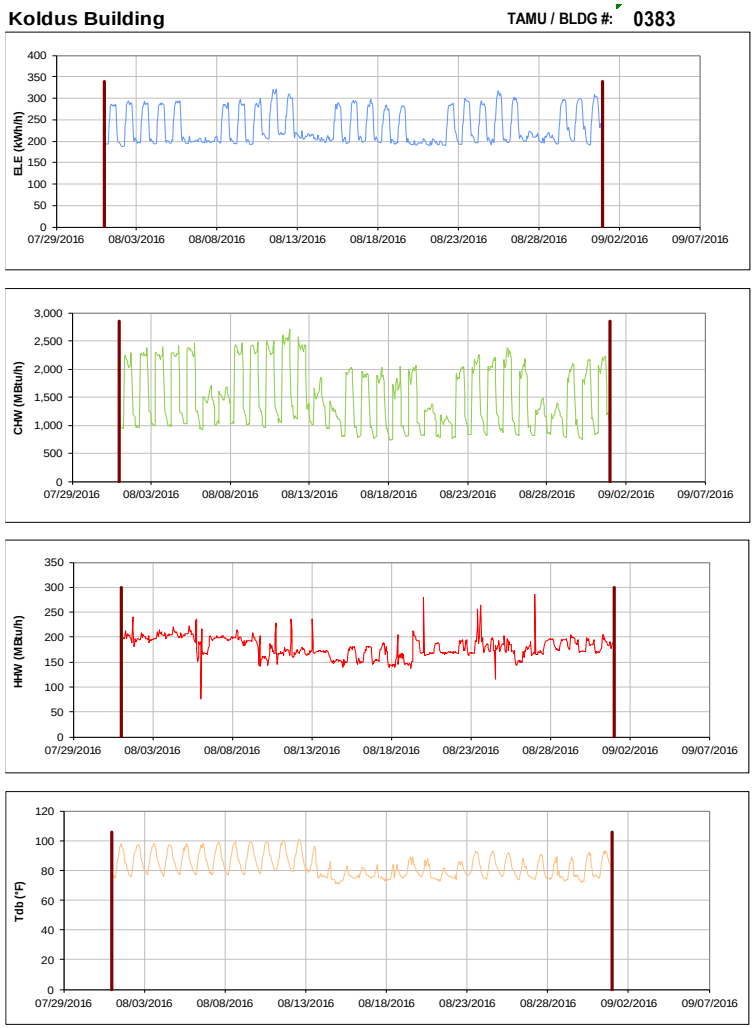


Figure III-18 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Koldus Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

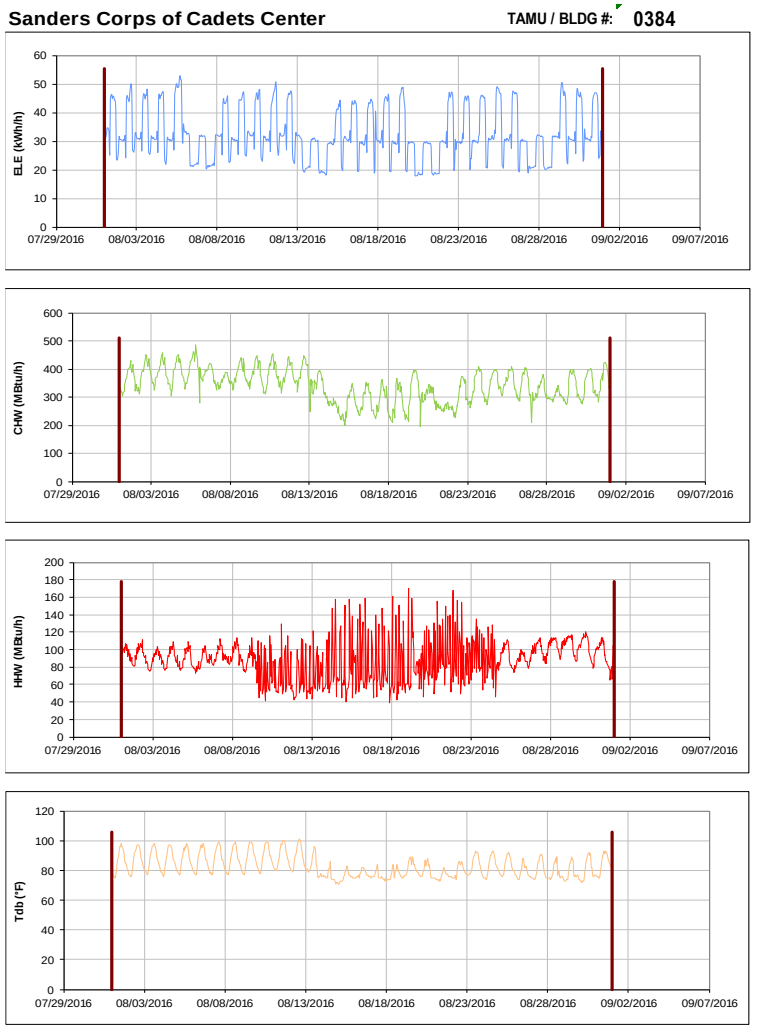


Figure III-19 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Sanders Corps of Cadets Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

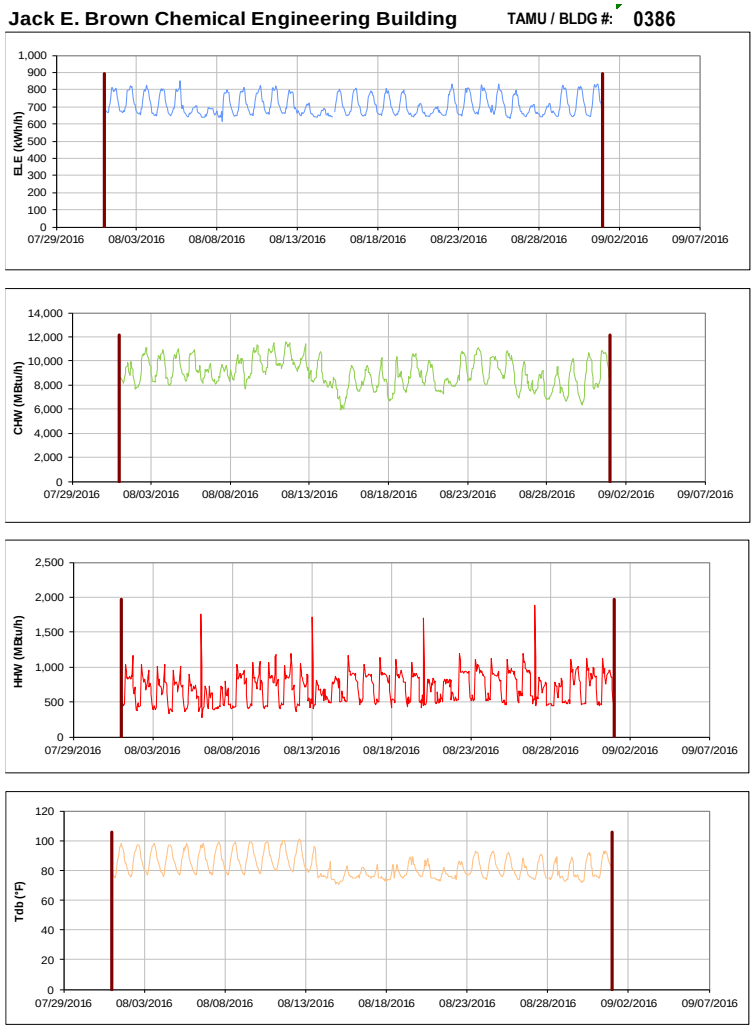


Figure III-20 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Jack E. Brown Chemical Engineering Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

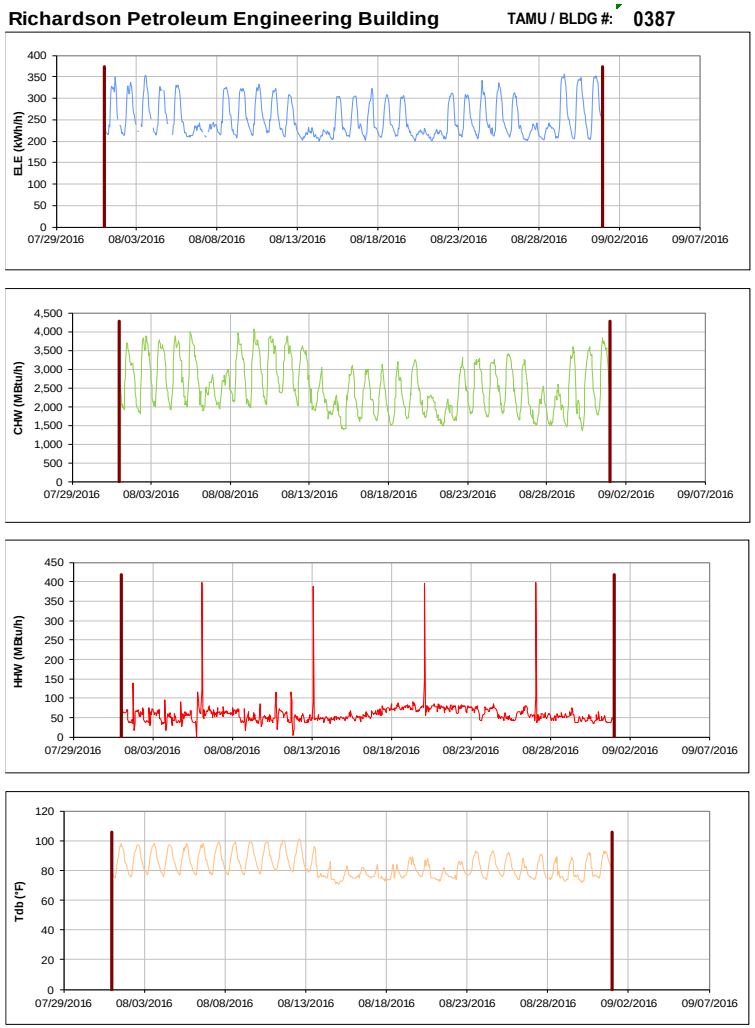


Figure III-21 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Richardson Petroleum Engineering Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

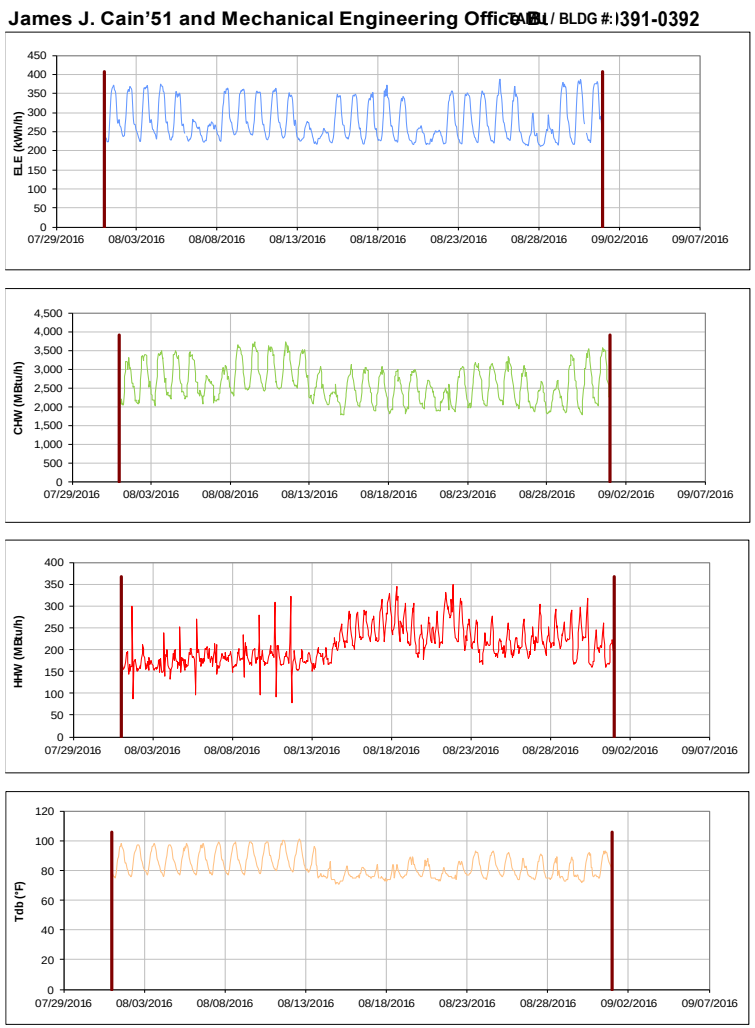


Figure III-22 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for James J. Cain'51 and Mechanical Engineering Office Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

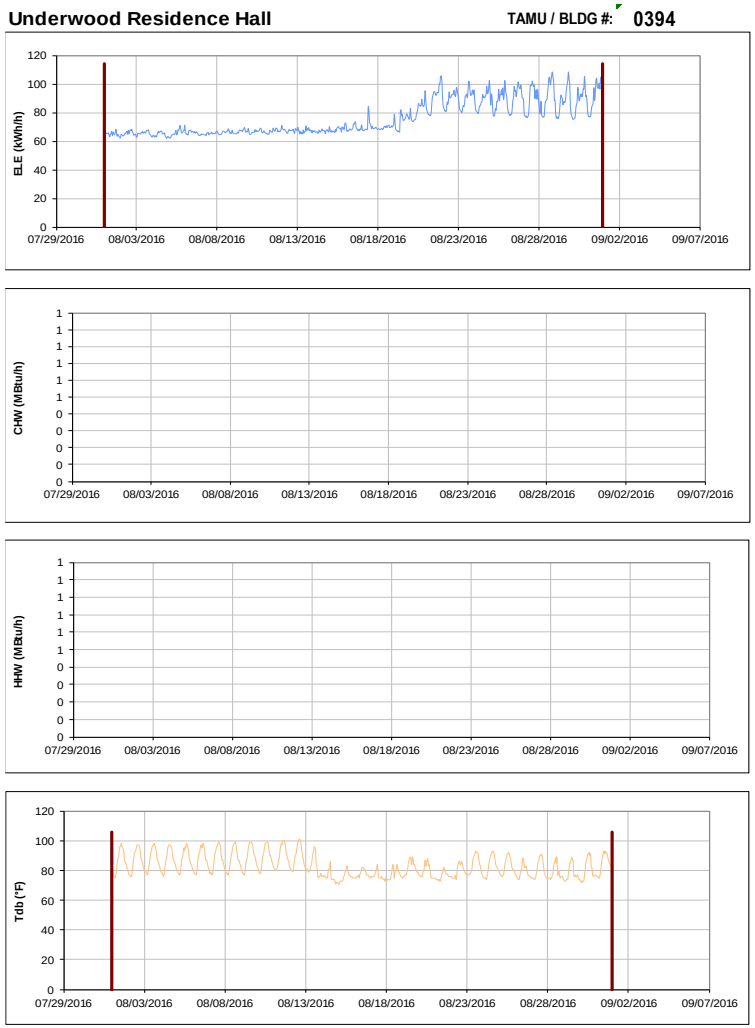


Figure III-23 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Underwood Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

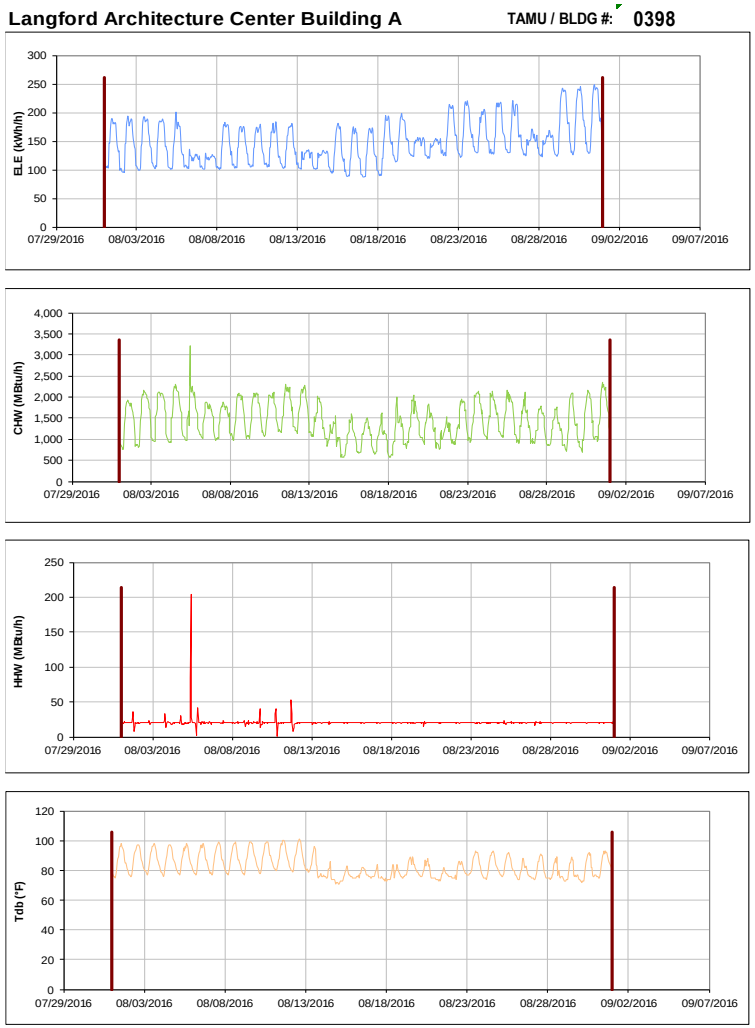


Figure III-24 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Langford Architecture Center Building A during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

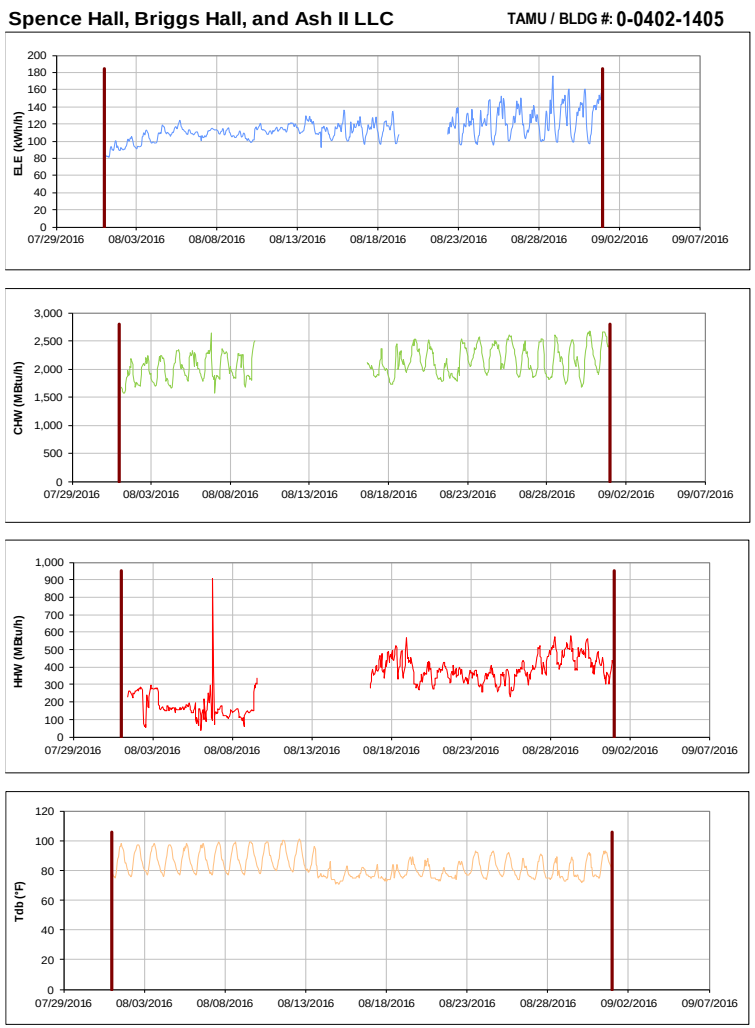


Figure III-25 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Spence Hall, Briggs Hall, and Ash II LLC during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

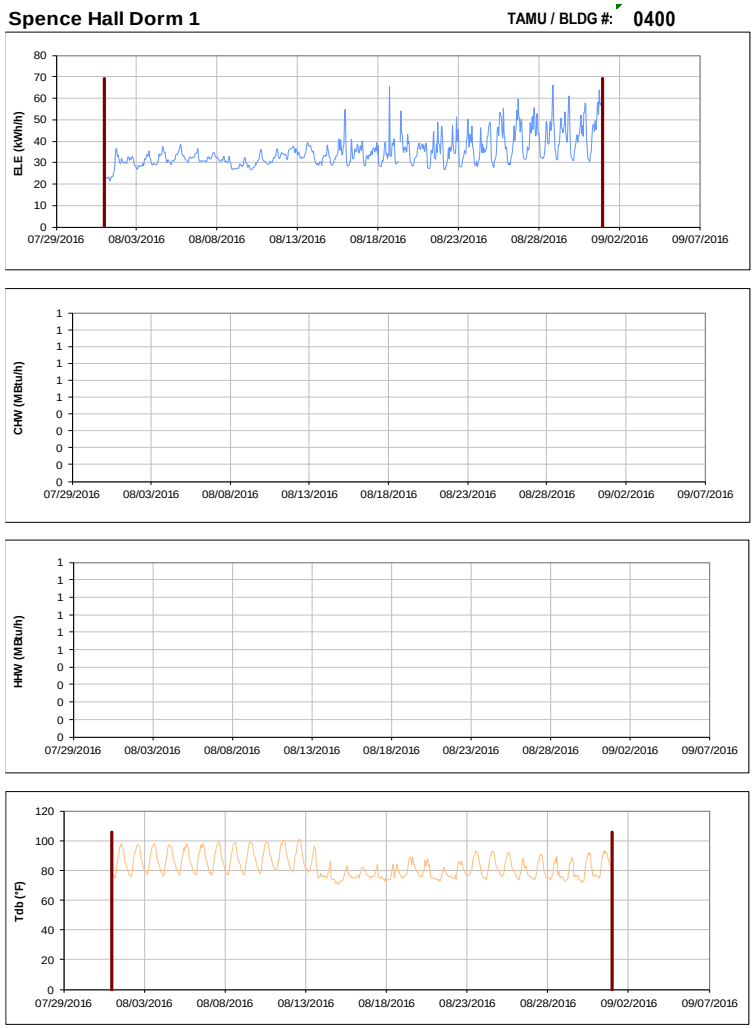


Figure III-26 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Spence Hall Dorm 1 during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

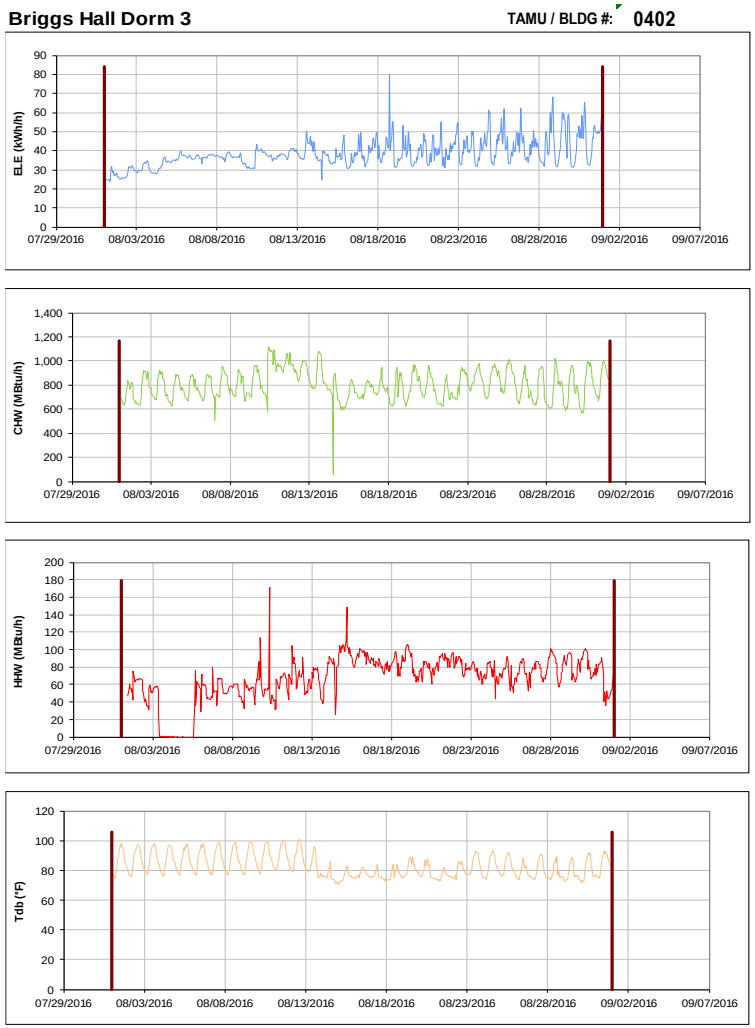


Figure III-27 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Briggs Hall Dorm 3 during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

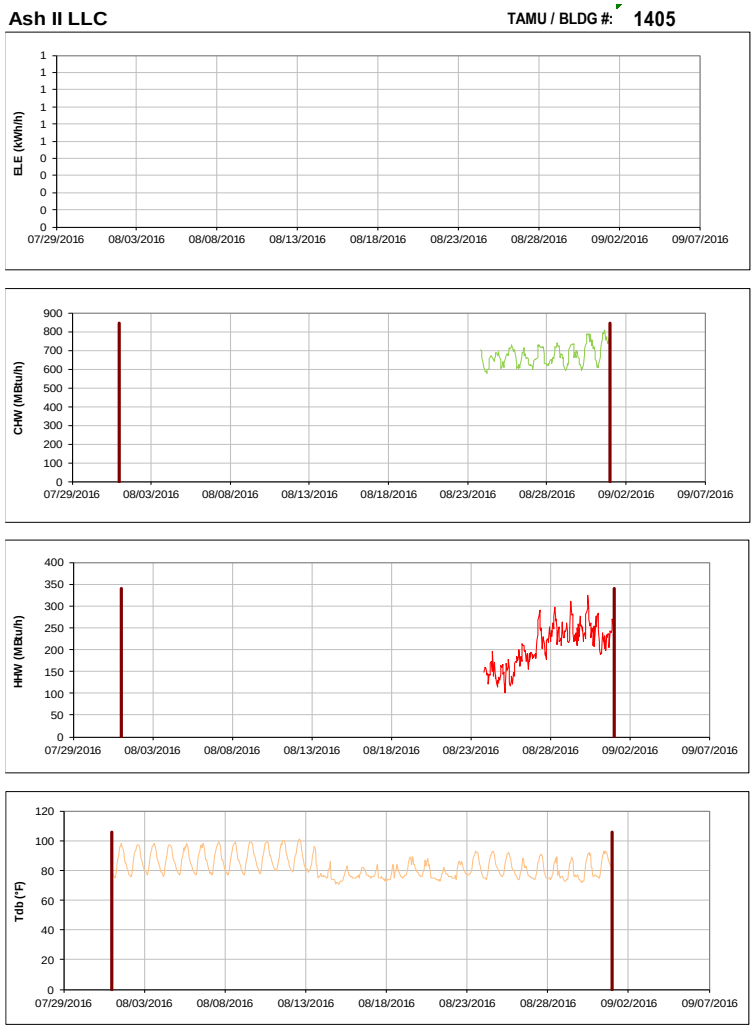


Figure III-28 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Ash II LLC during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

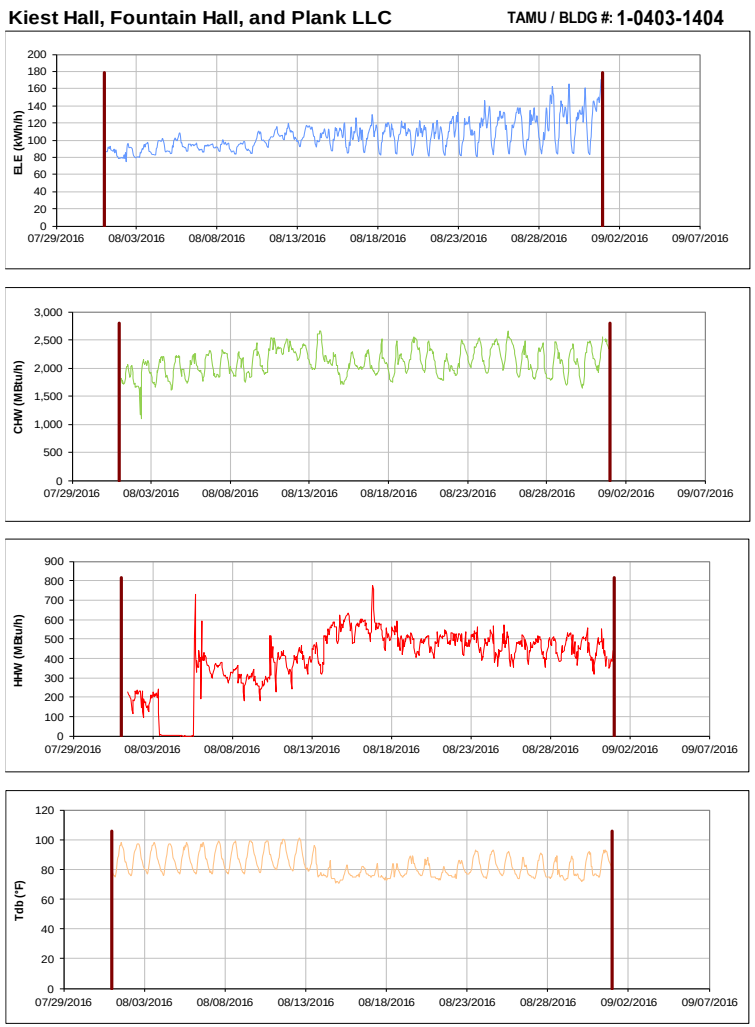


Figure III-29 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kiest Hall, Fountain Hall, and Plank LLC during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

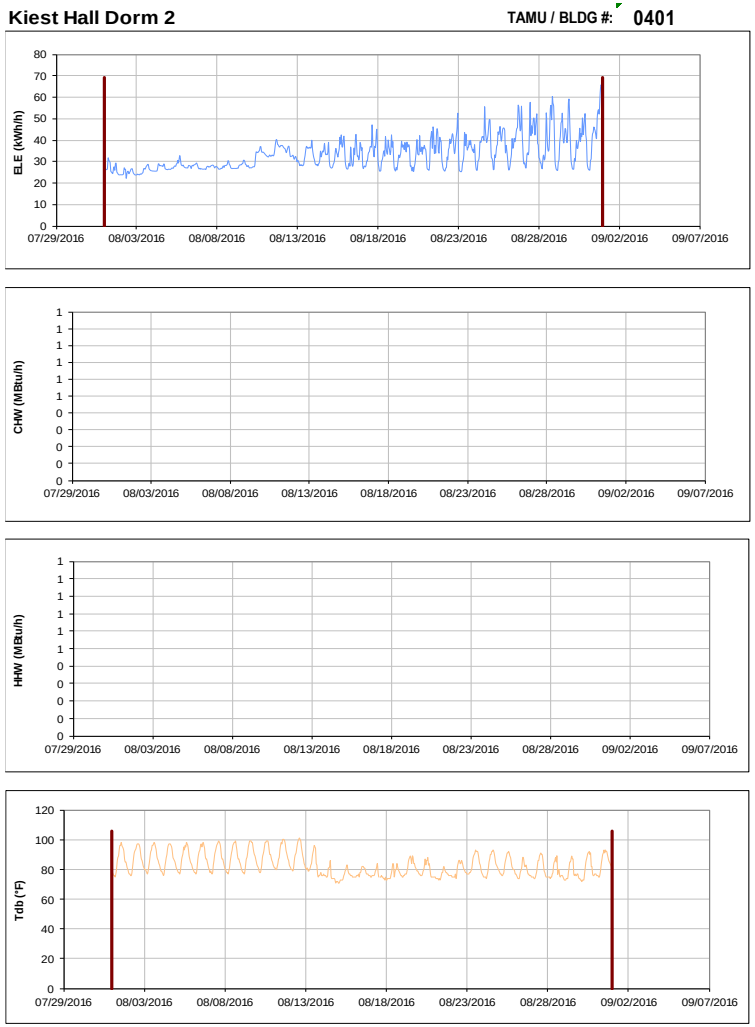


Figure III-30 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kiest Hall Dorm 2 during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

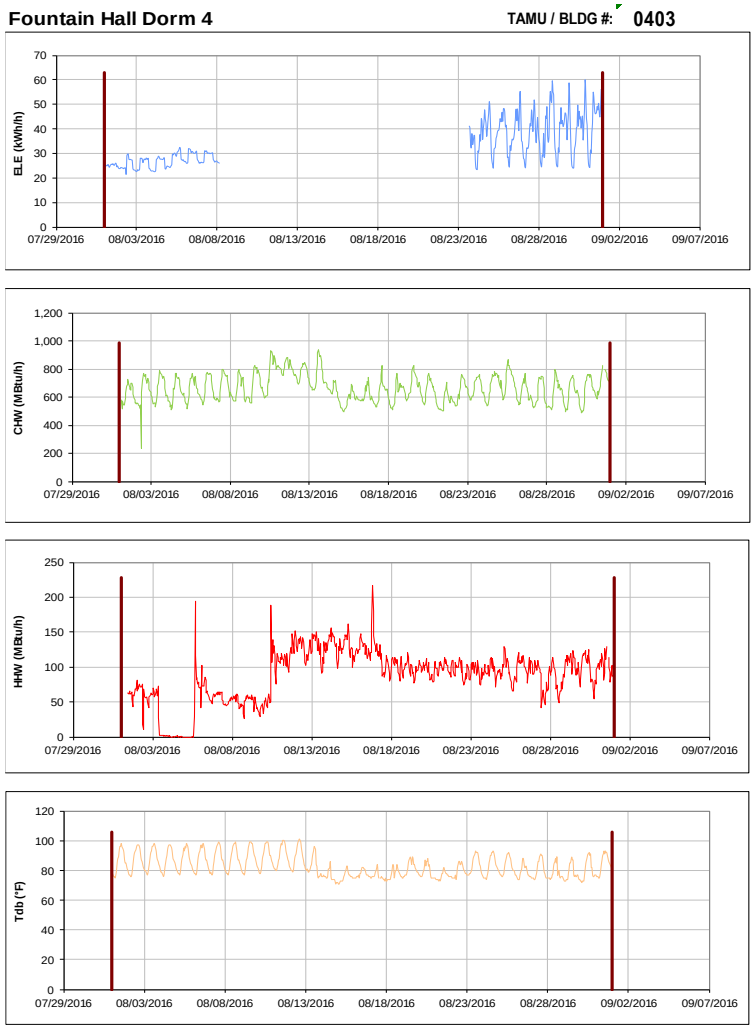


Figure III-31 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Fountain Hall Dorm 4 during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

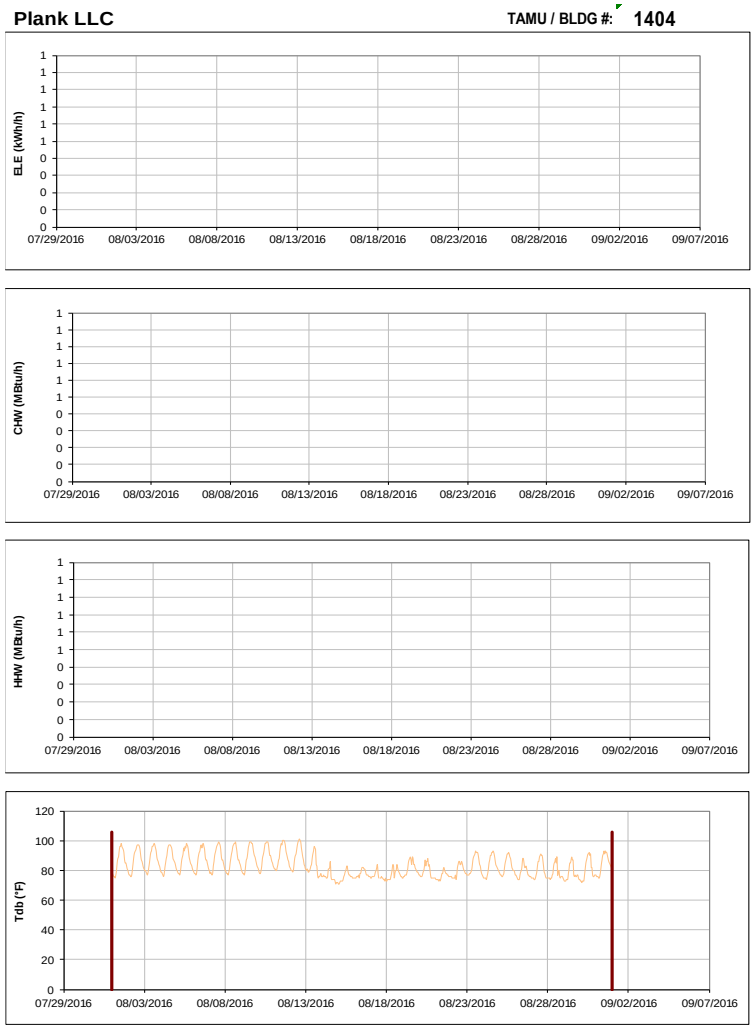


Figure III-32 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Plank LLC during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

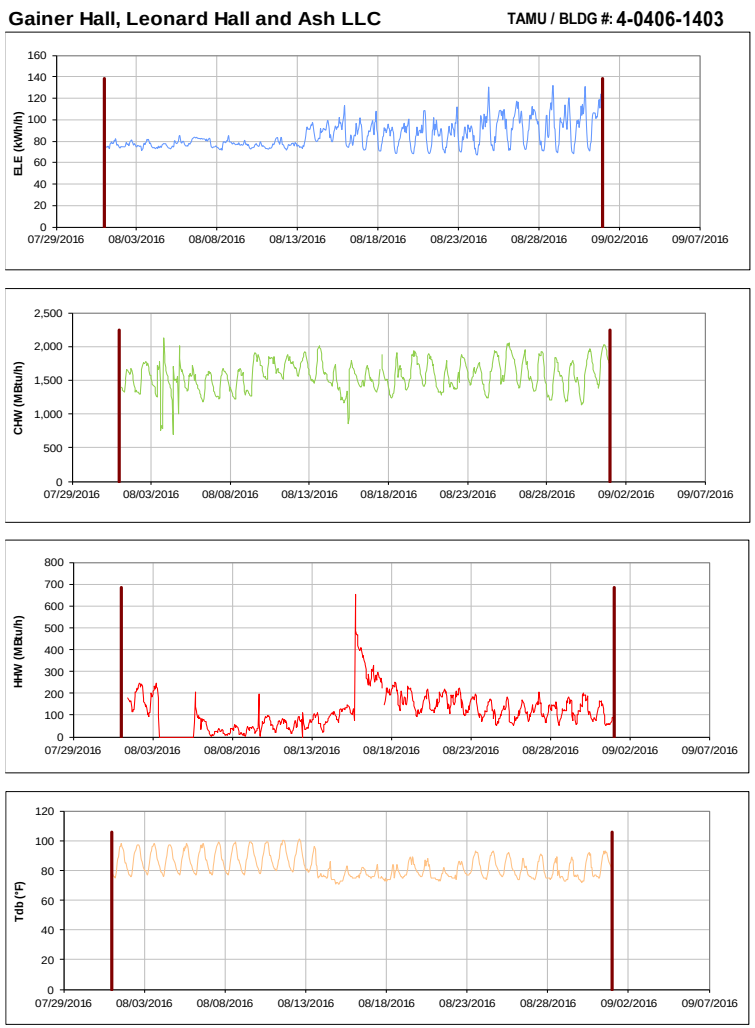


Figure III-33 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Gainer Hall, Leonard Hall and Ash LLC during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

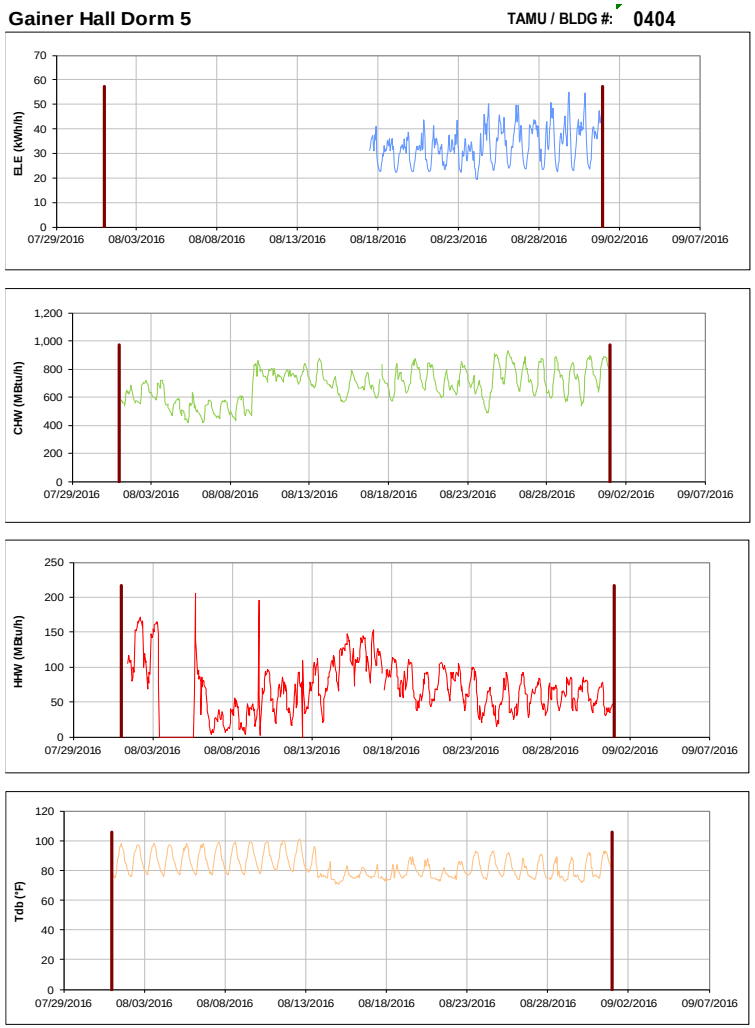


Figure III-34 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Gainer Hall Dorm 5 during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

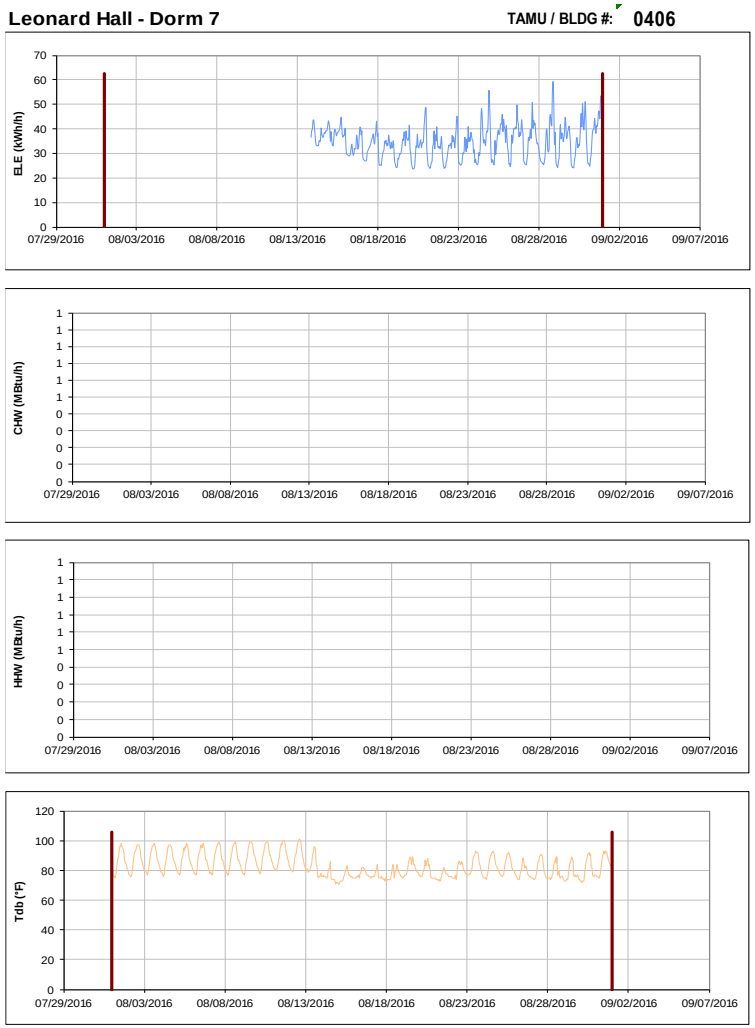


Figure III-35 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Leonard Hall - Dorm 7 during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

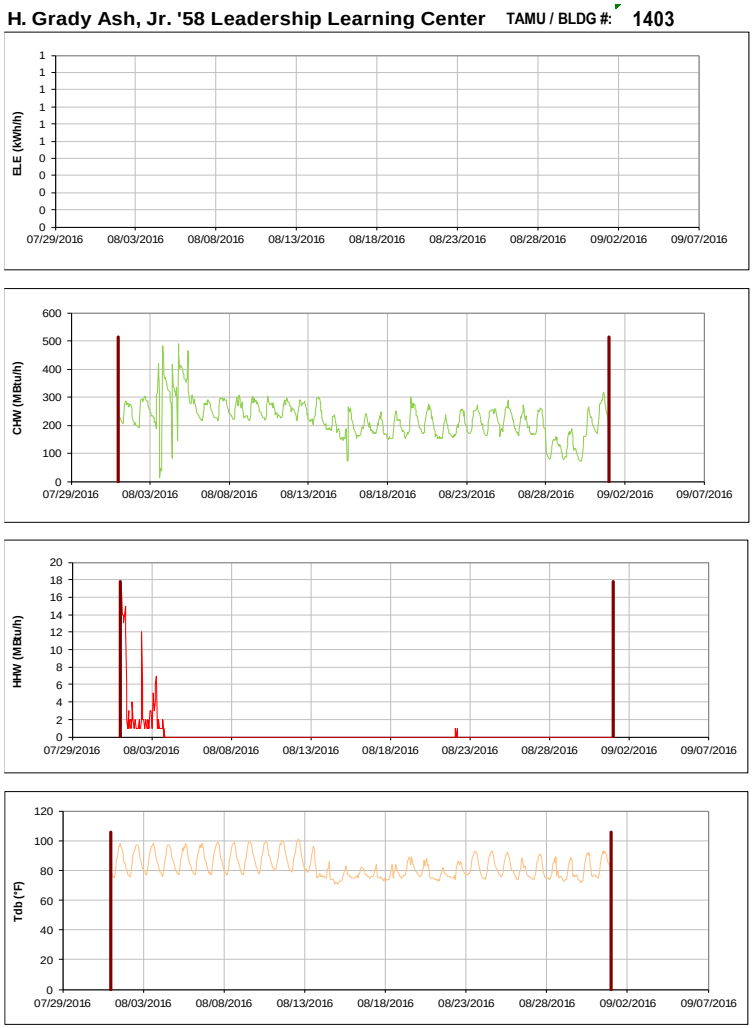


Figure III-36 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for H. Grady Ash, Jr. '58 Leadership Learning Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

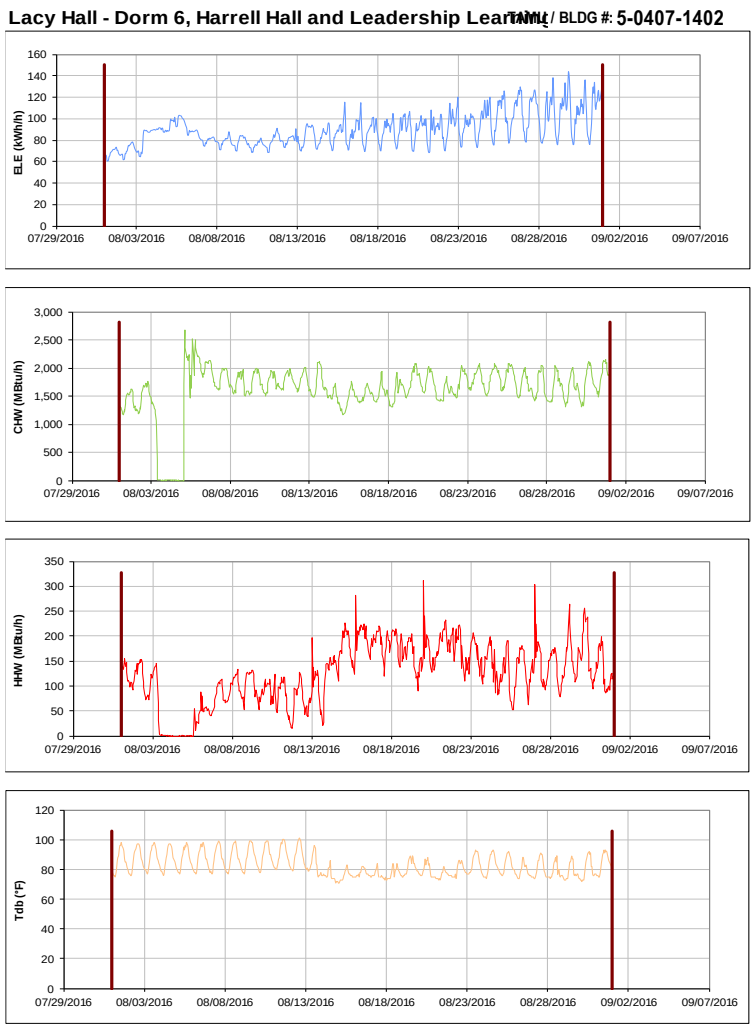


Figure III-37 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station

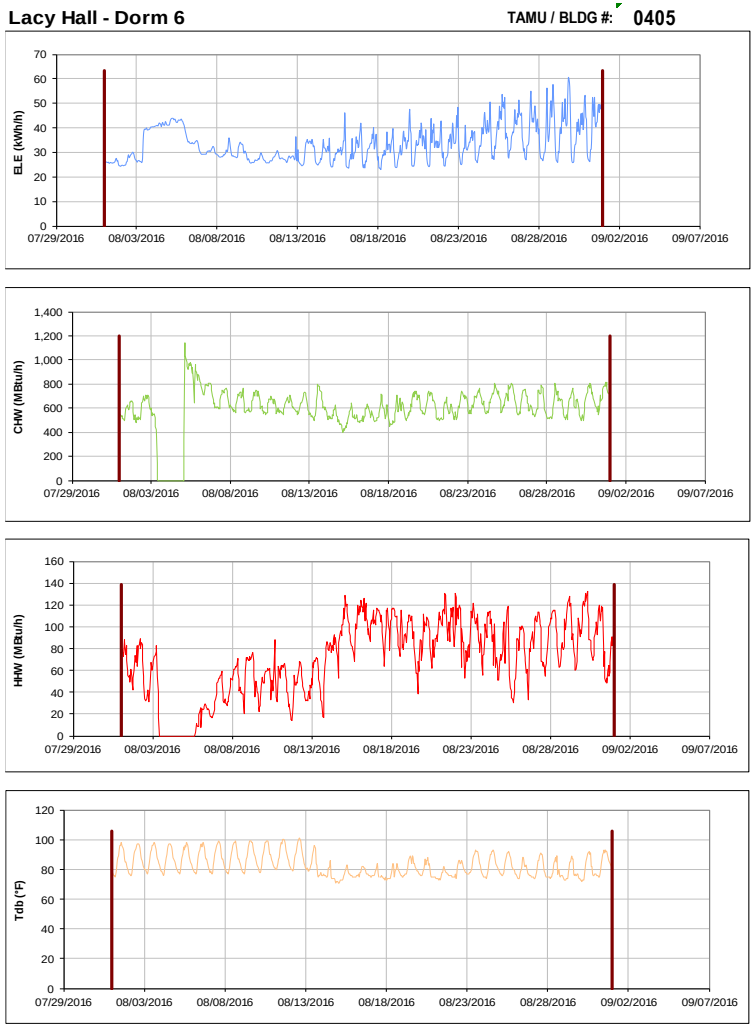


Figure III-38 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lacy Hall - Dorm 6 during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

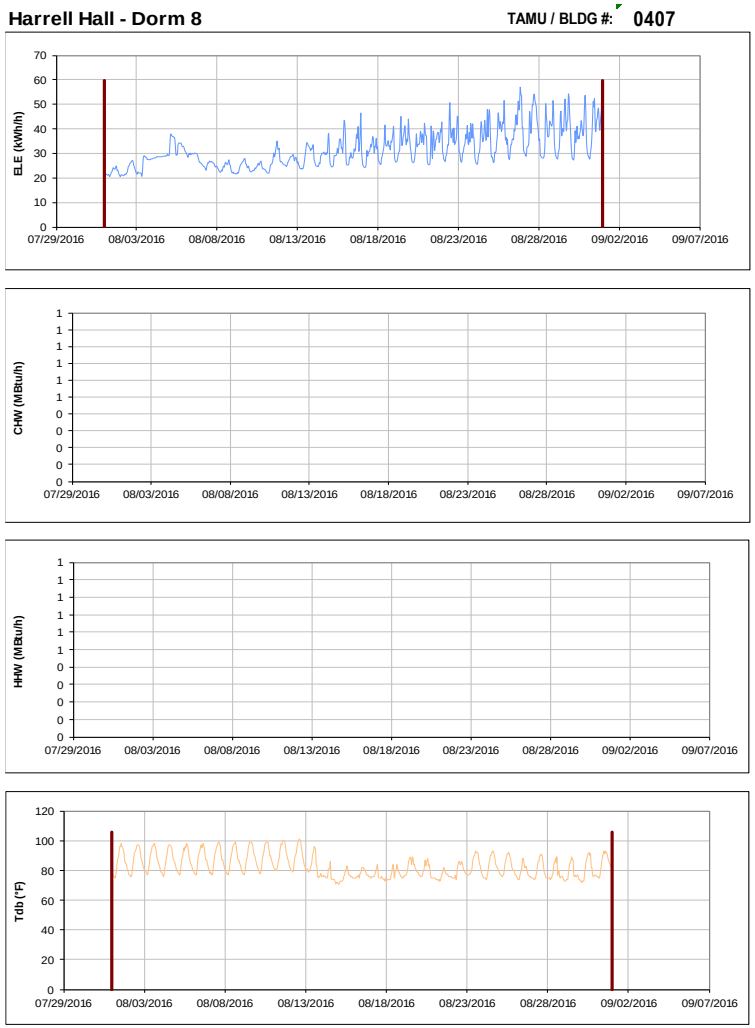


Figure III-39 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrell Hall - Dorm 8 during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

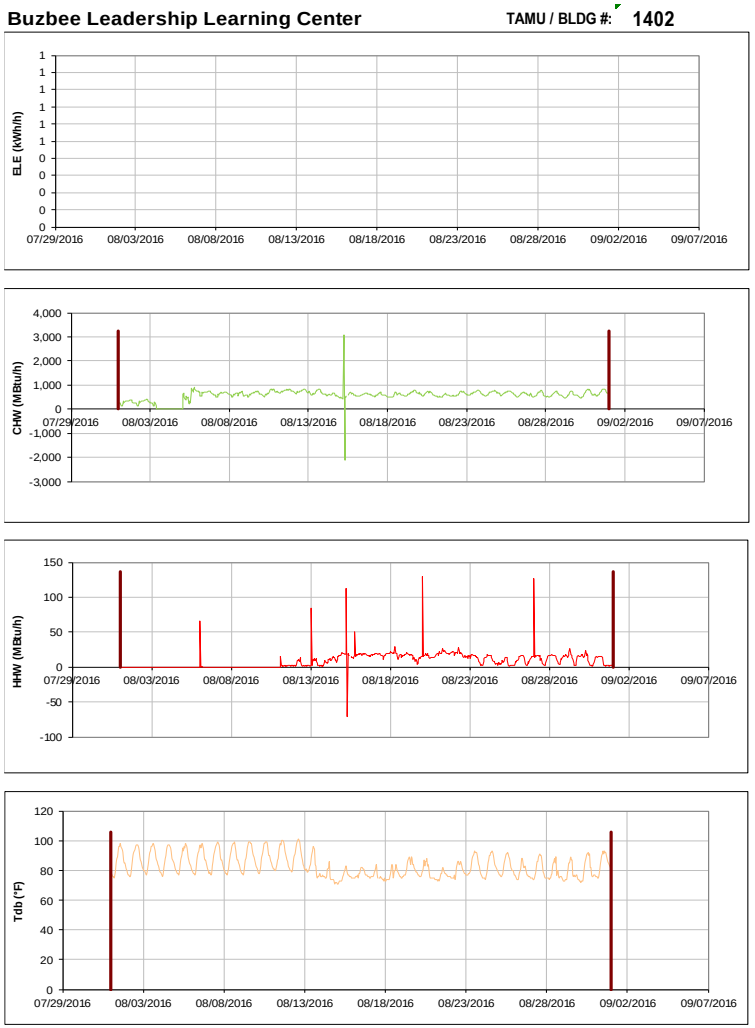


Figure III-40 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Buzbee Leadership Learning Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

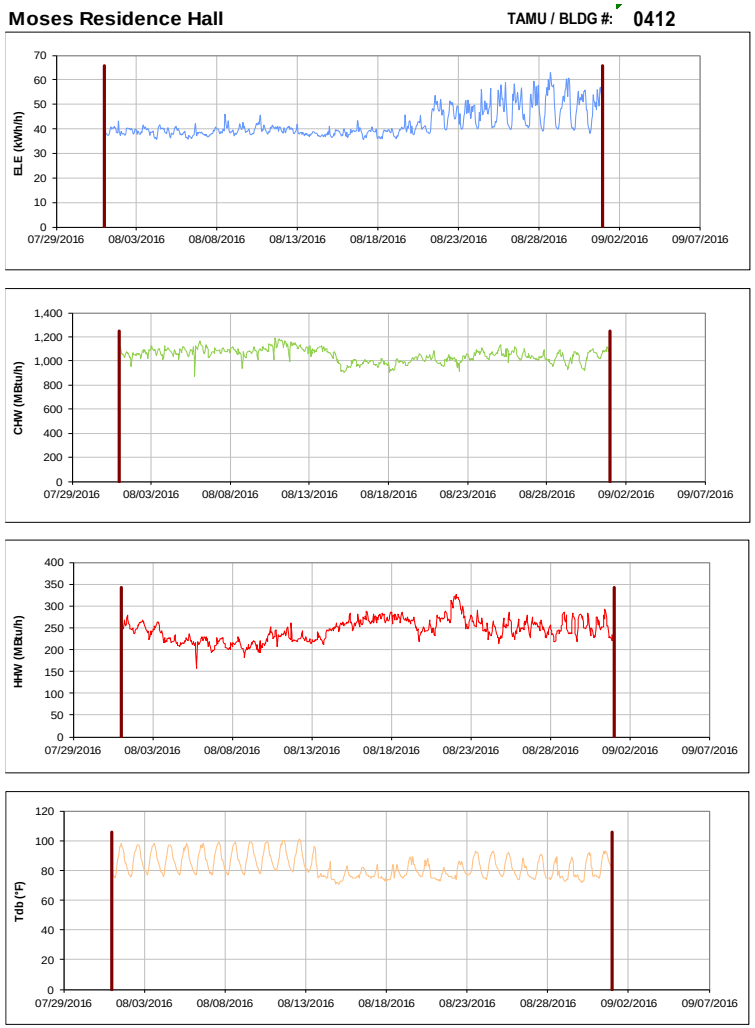


Figure III-41 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Moses Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

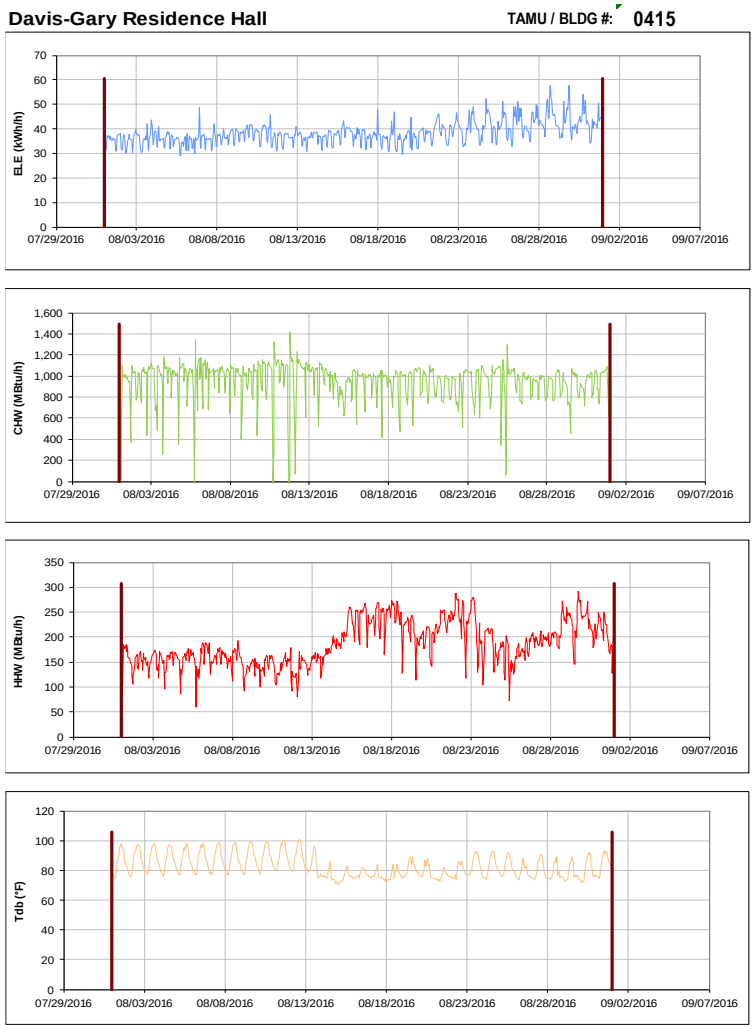


Figure III-42 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Davis-Gary Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

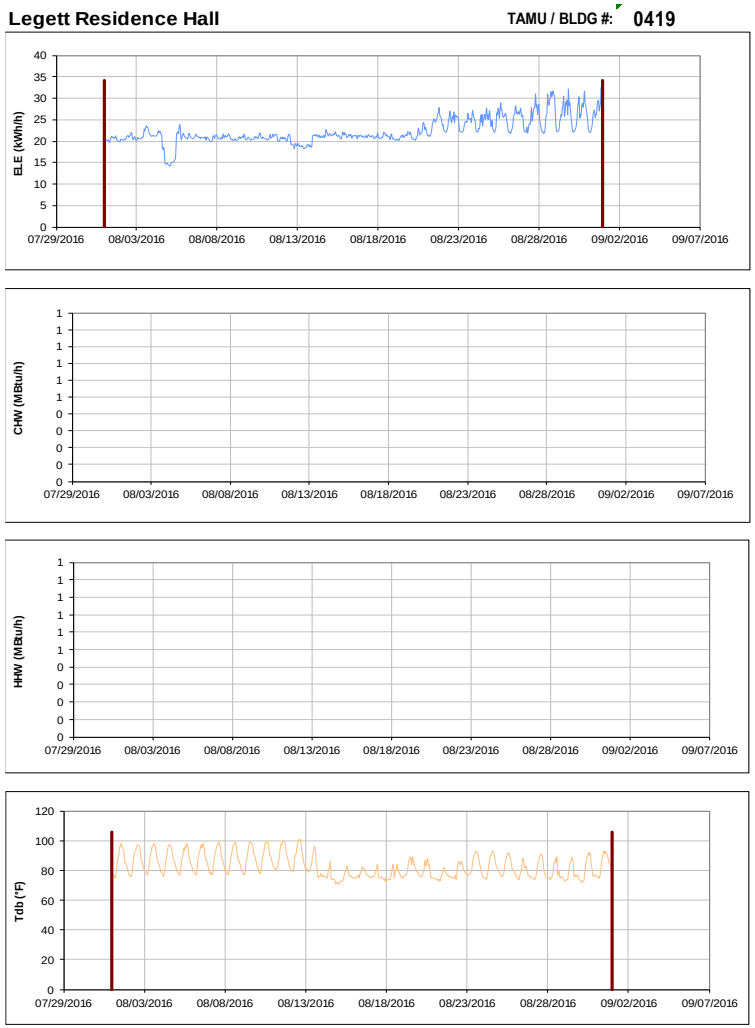


Figure III-43 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Legett Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

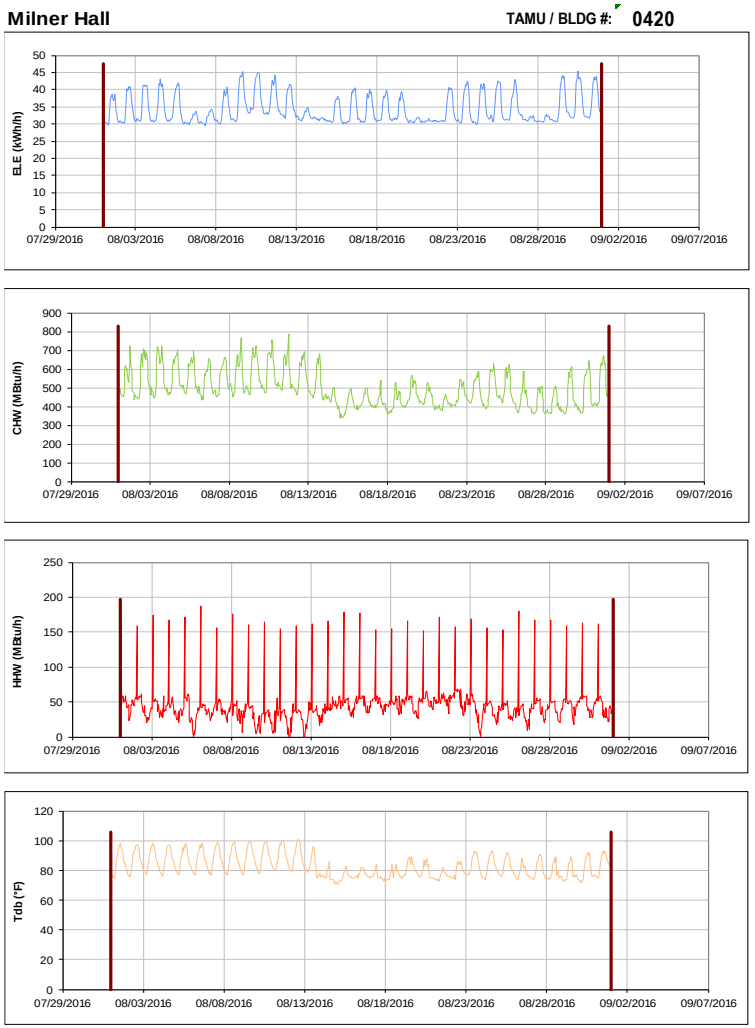


Figure III-44 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Milner Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

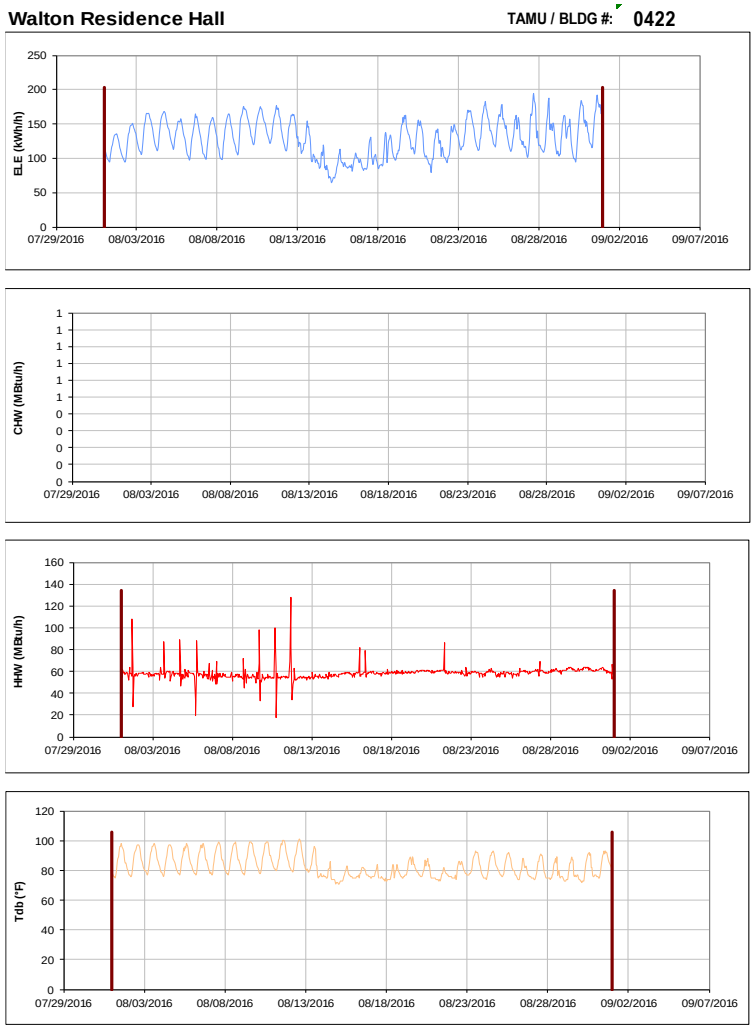


Figure III-45 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Walton Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

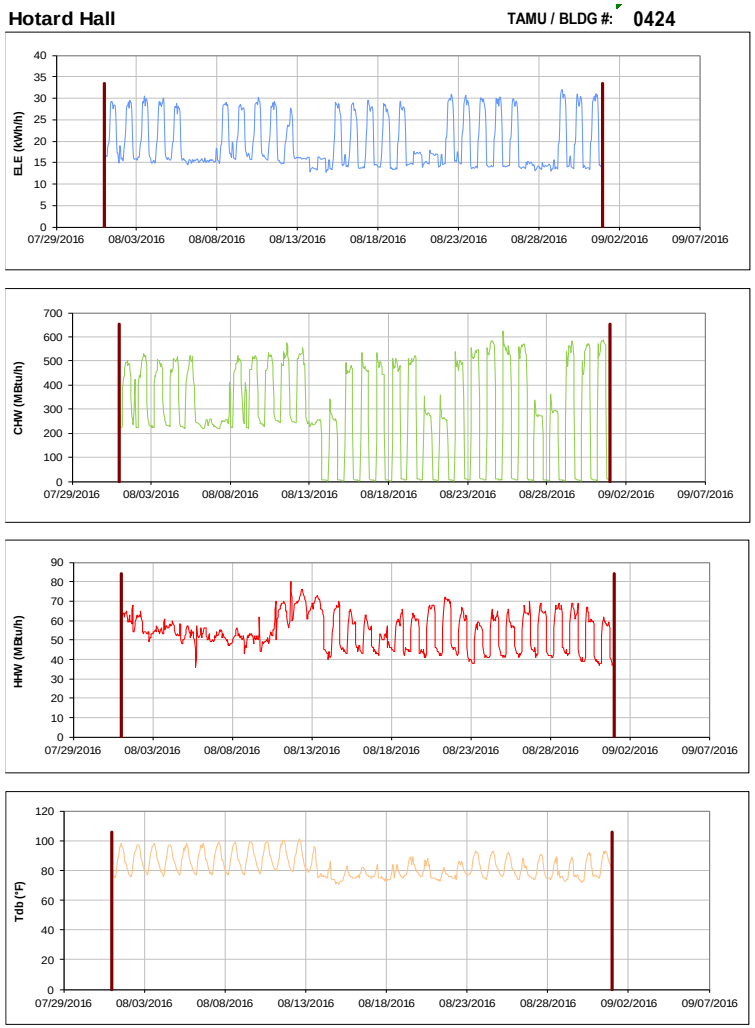


Figure III-46 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hotard Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

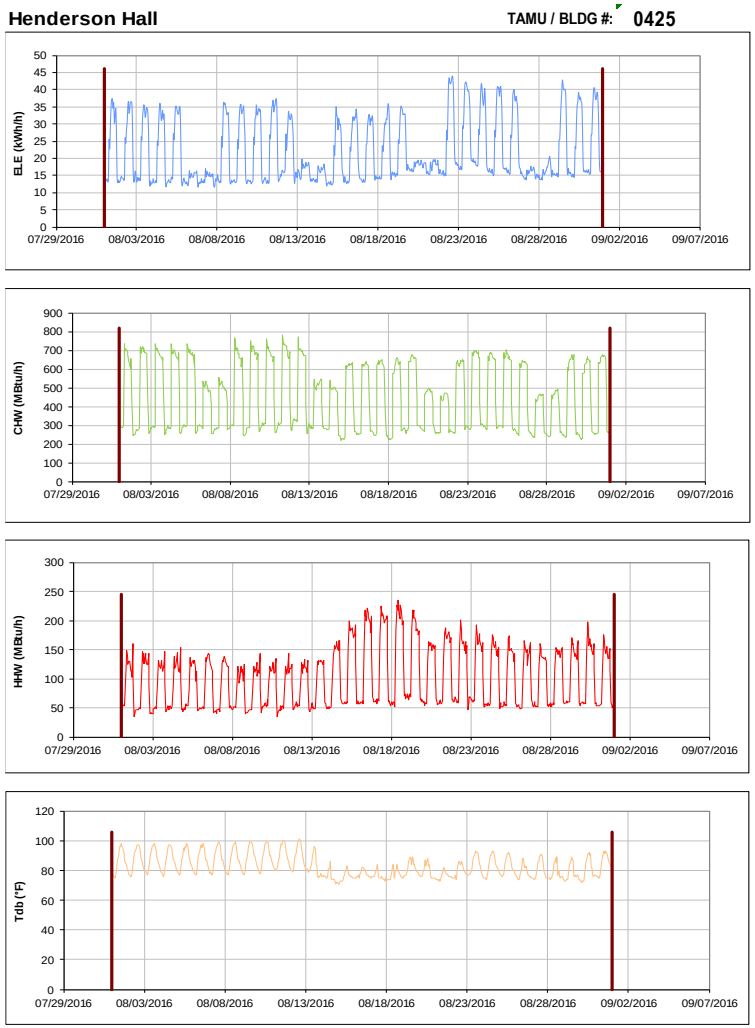


Figure III-47 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Henderson Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

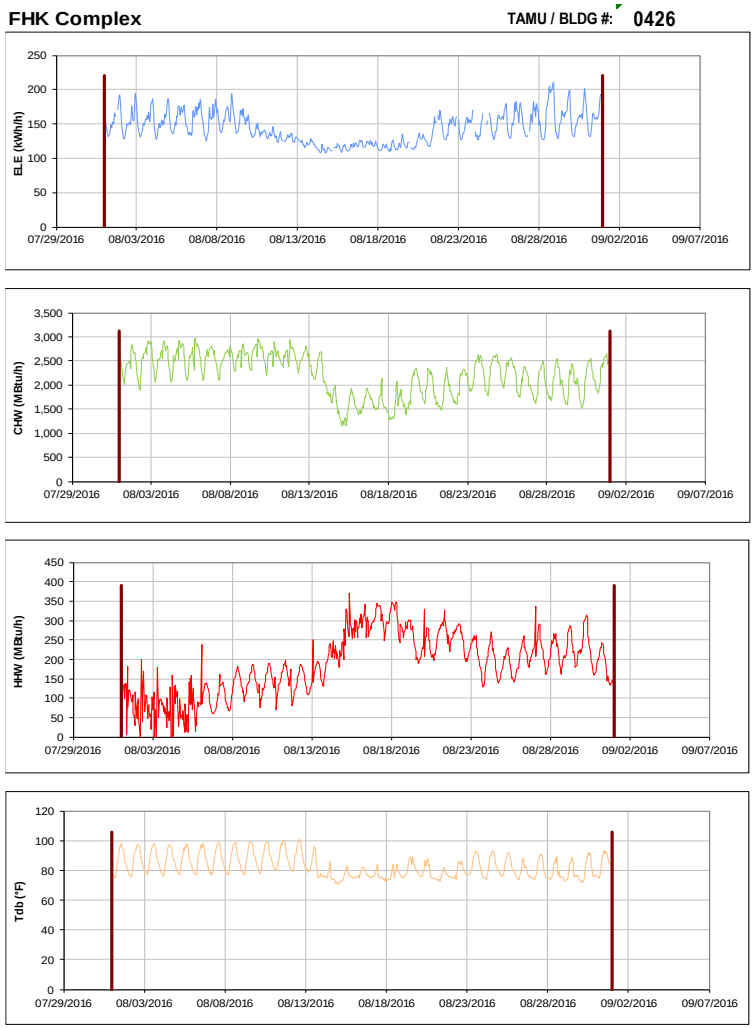


Figure III-48 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for FHK Complex during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

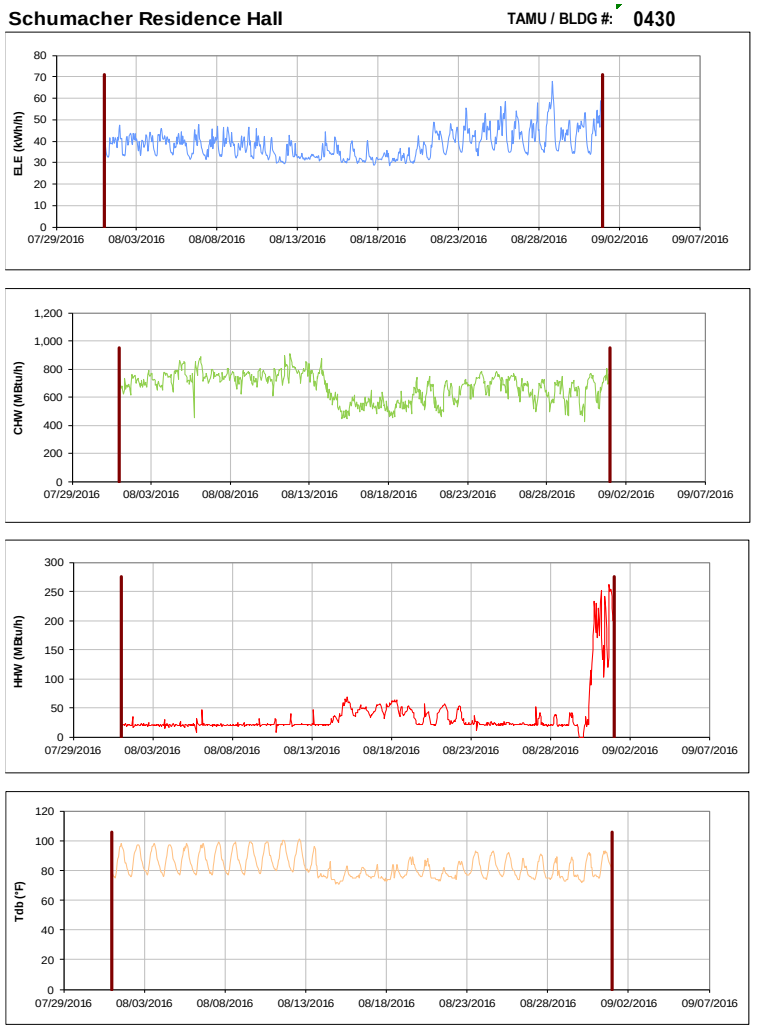


Figure III-49 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Schumacher Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

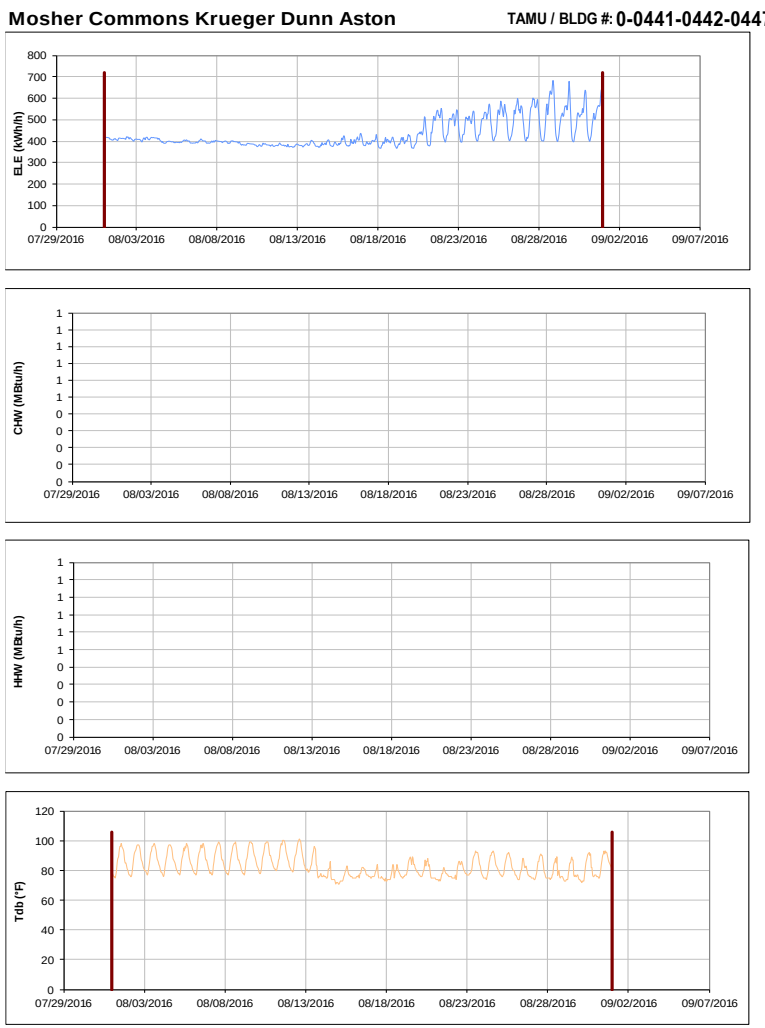


Figure III-50 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mosher Commons Krueger Dunn Aston during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

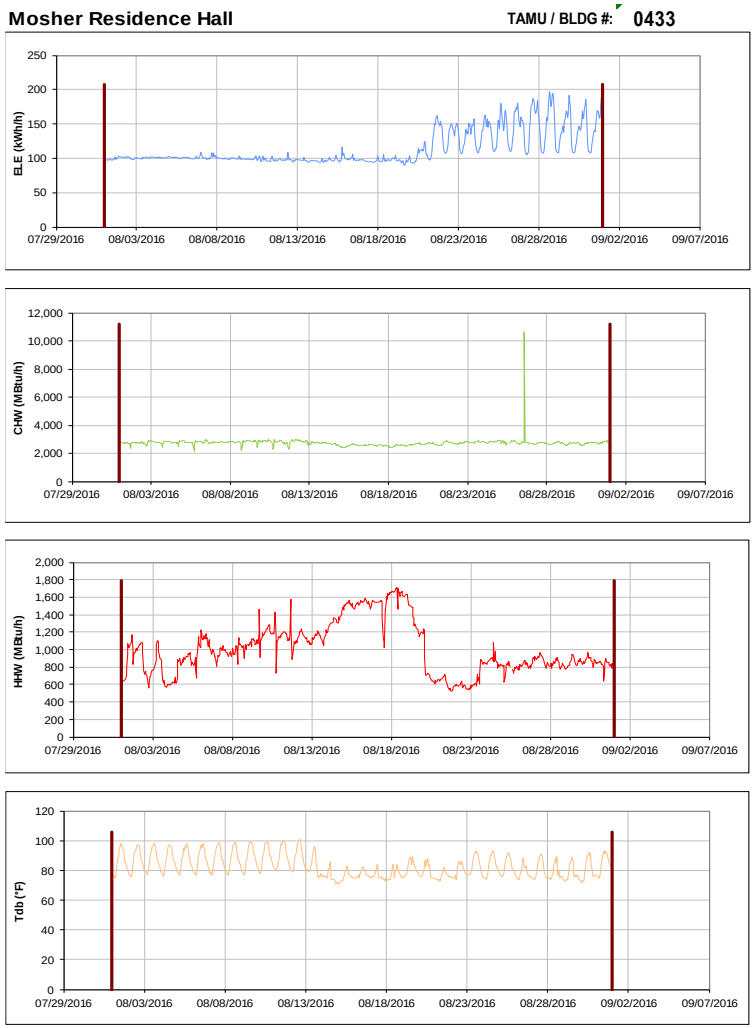


Figure III-51 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mosher Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

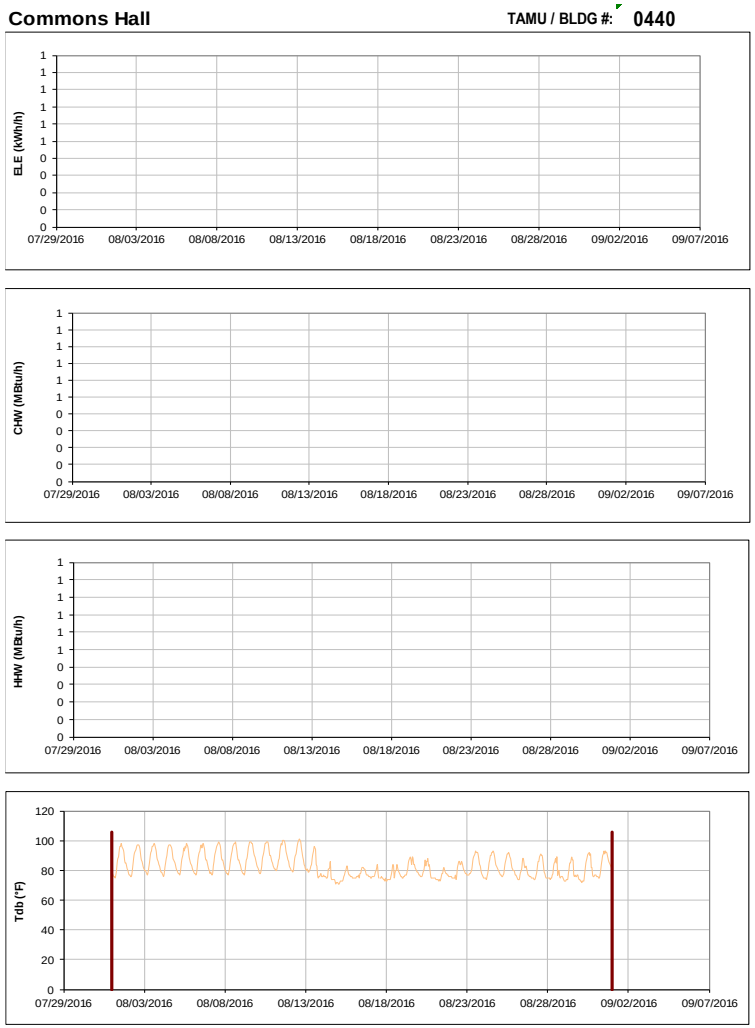


Figure III-52 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Commons Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

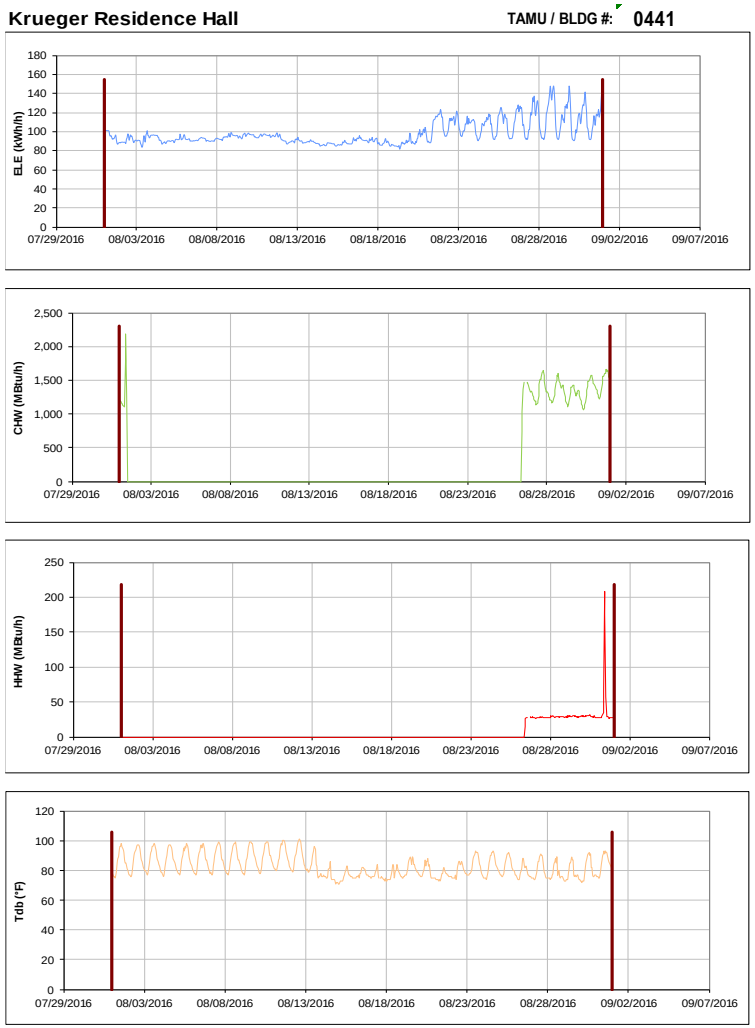


Figure III-53 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Krueger Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

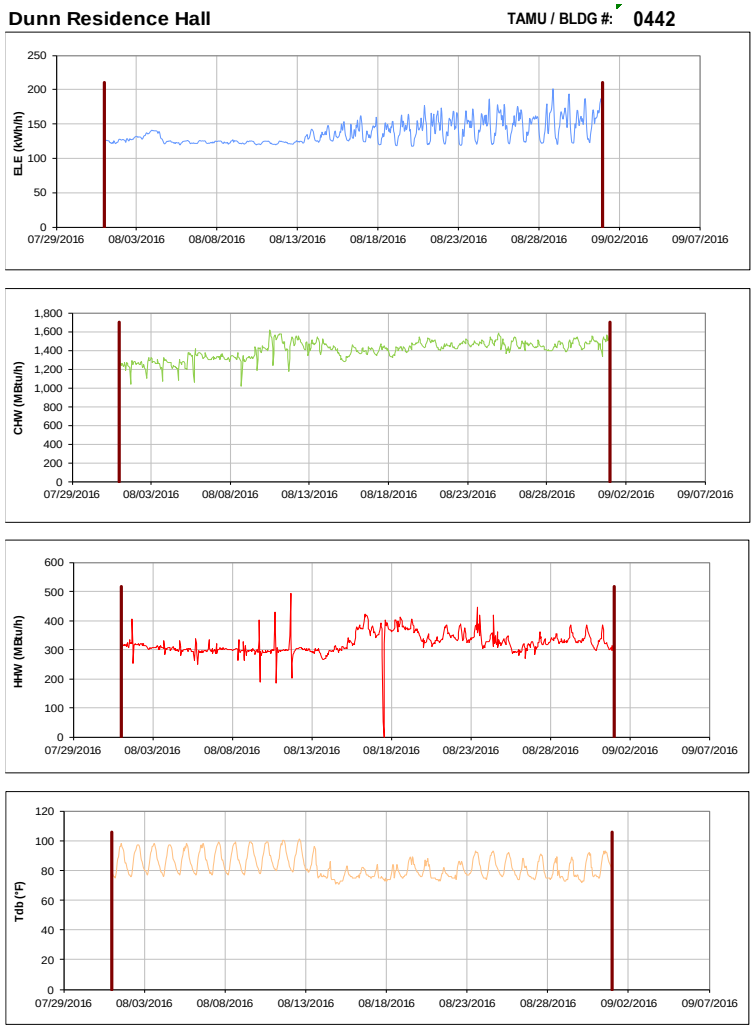


Figure III-54 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Dunn Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

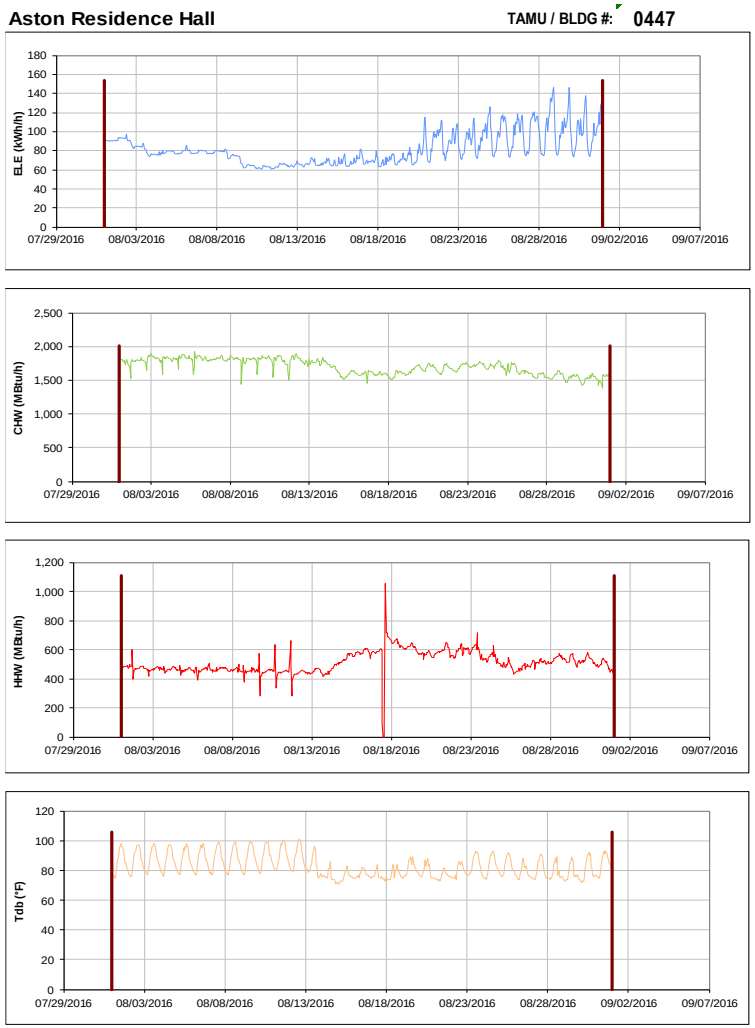


Figure III-55 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Aston Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

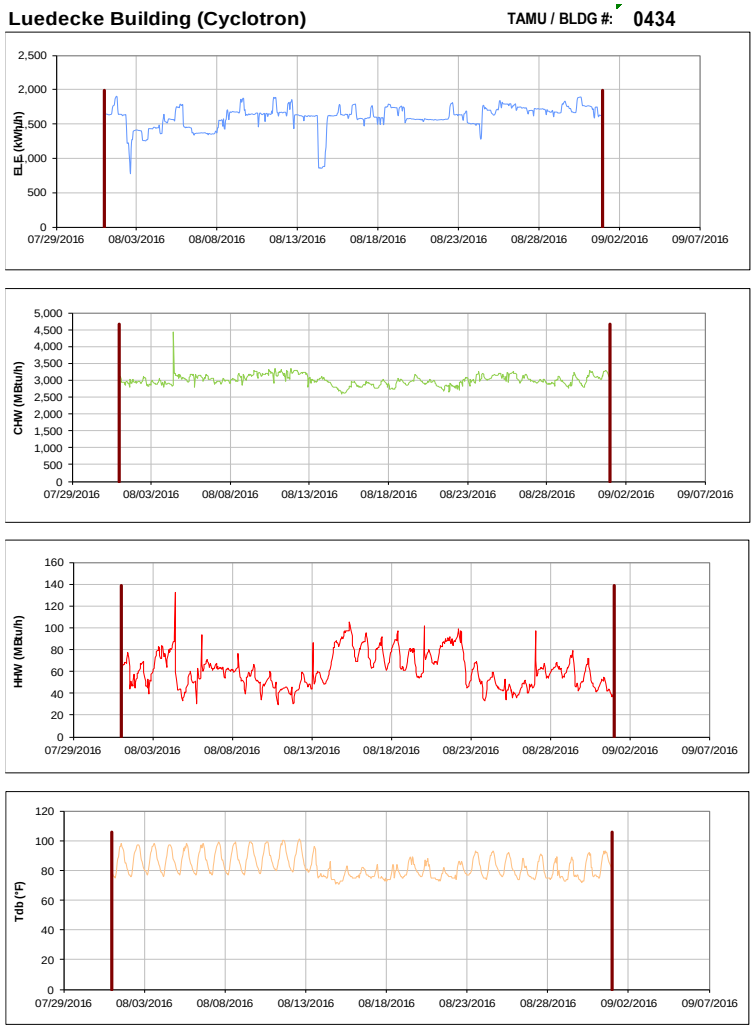


Figure III-56 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Luedecke Building (Cyclotron) during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

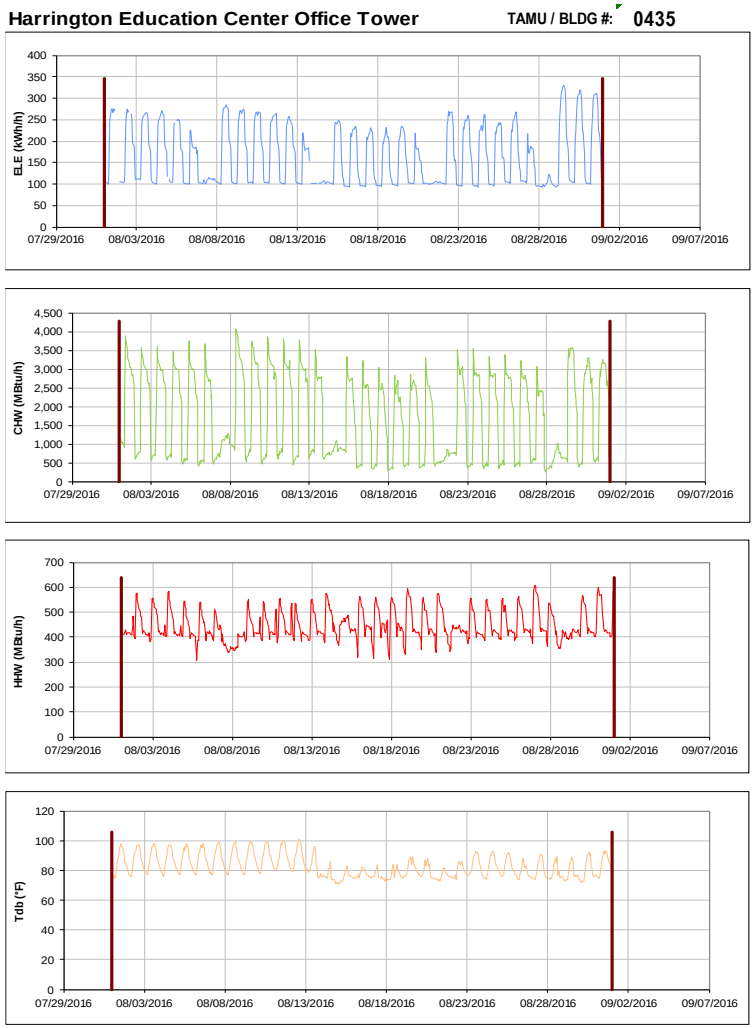


Figure III-57 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrington Education Center Office Tower during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

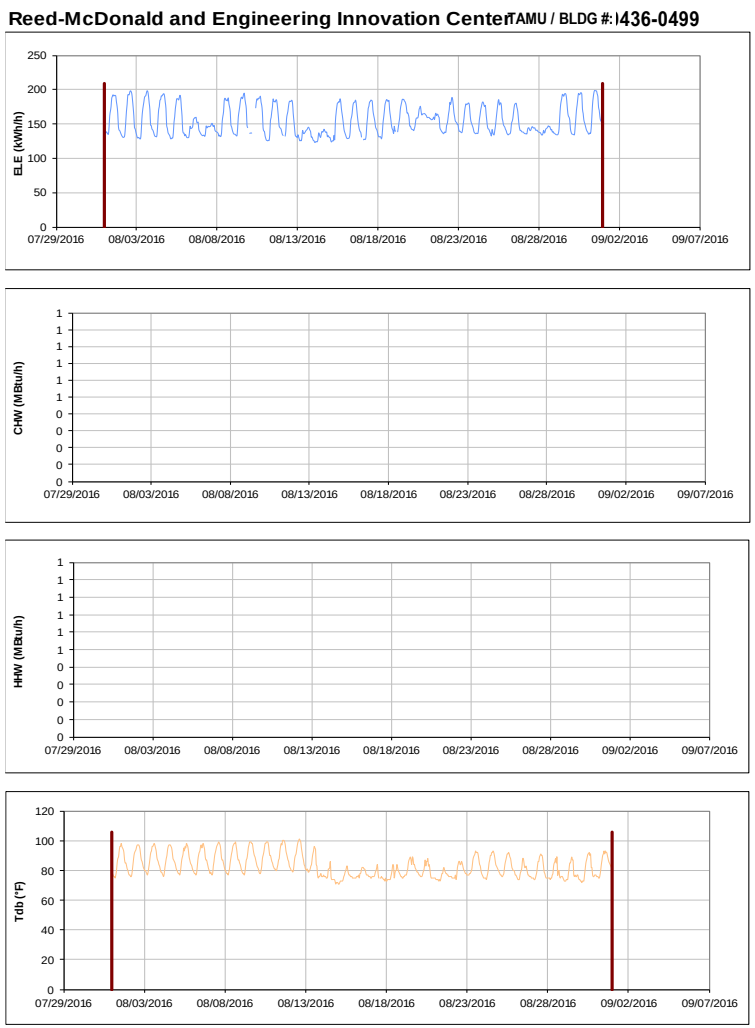


Figure III-58 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed-McDonald and Engineering Innovation Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

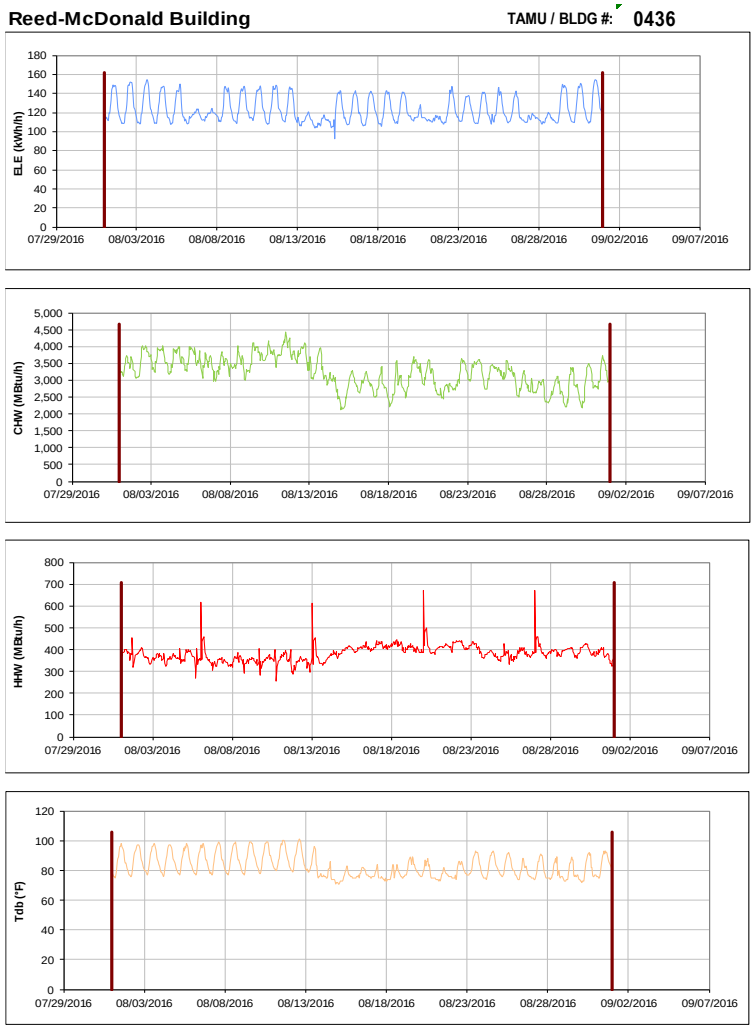


Figure III-59 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed-McDonald Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

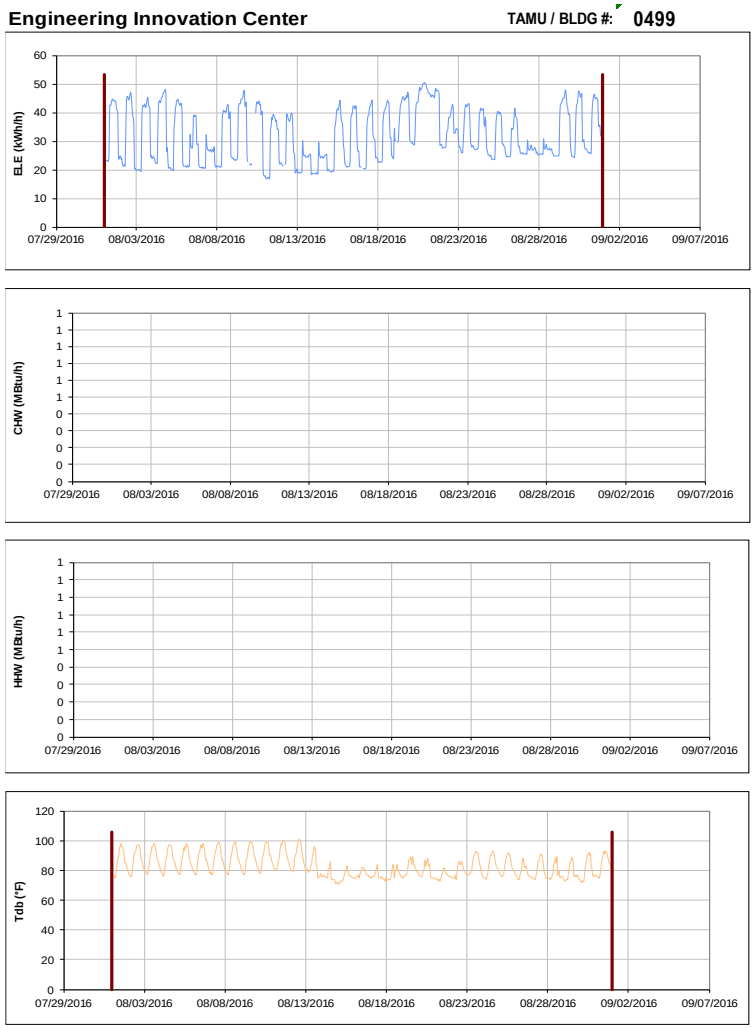


Figure III-60 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Engineering Innovation Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

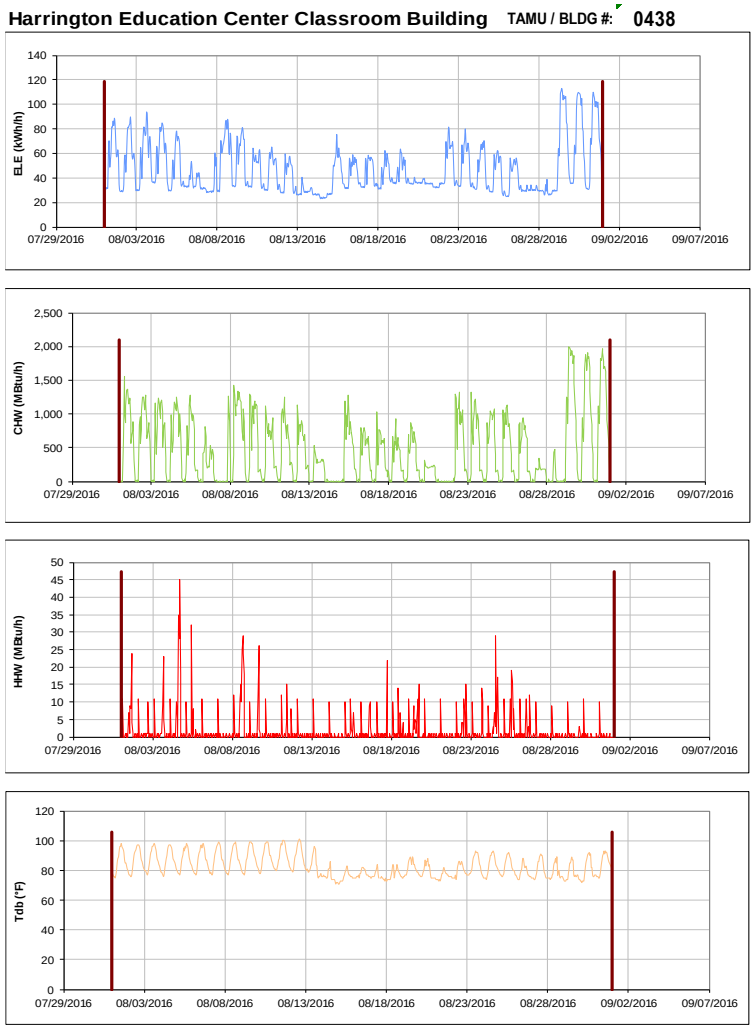


Figure III-61 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrington Education Center Classroom Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

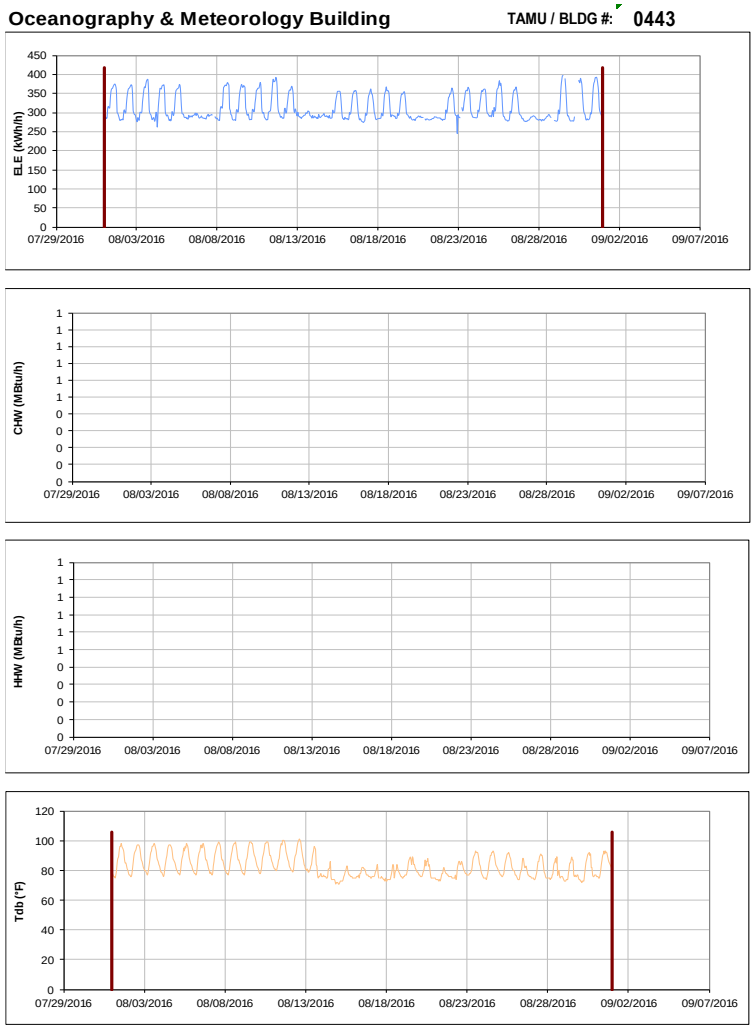


Figure III-62 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Oceanography & Meteorology Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

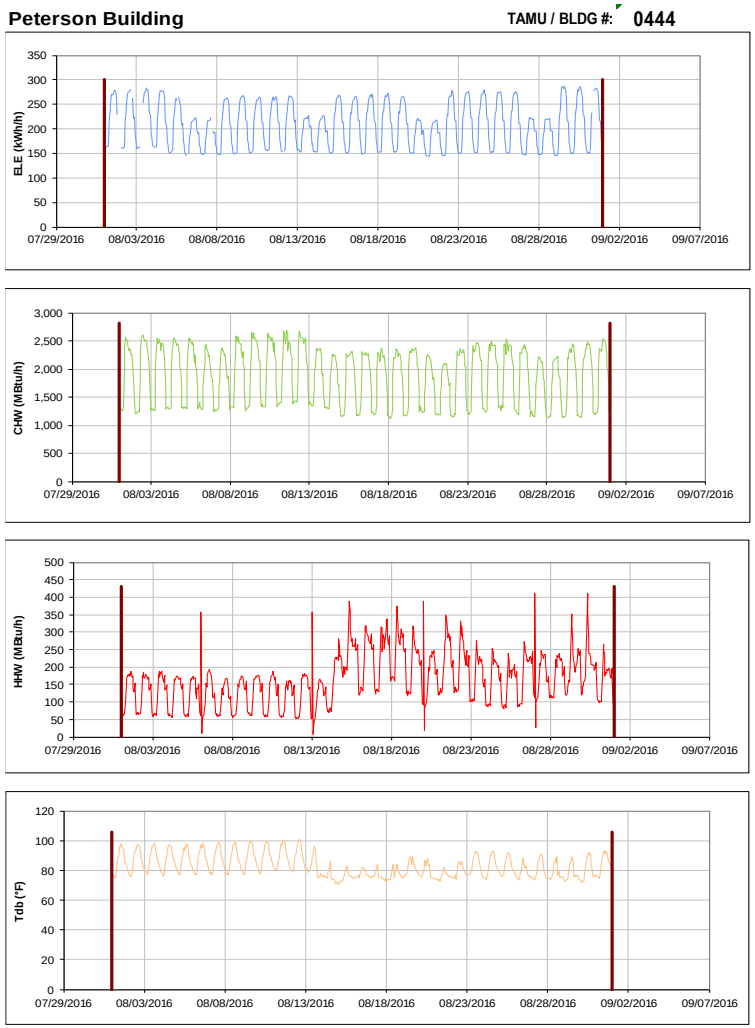


Figure III-63 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Peterson Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

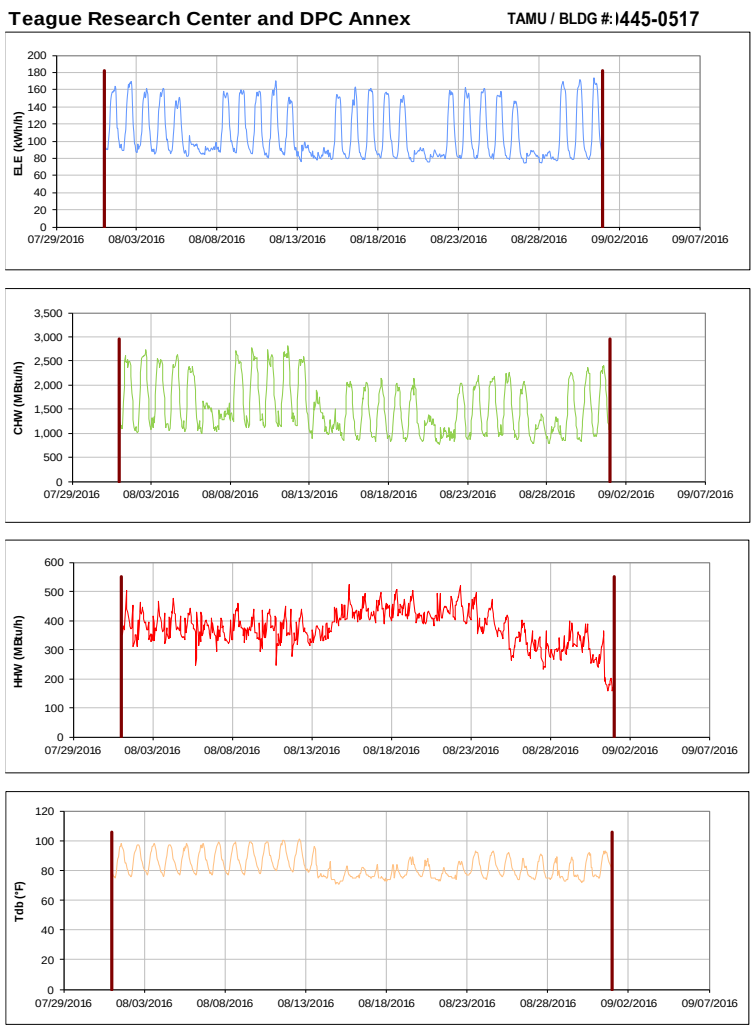


Figure III-64 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Teague Research Center and DPC Annex during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

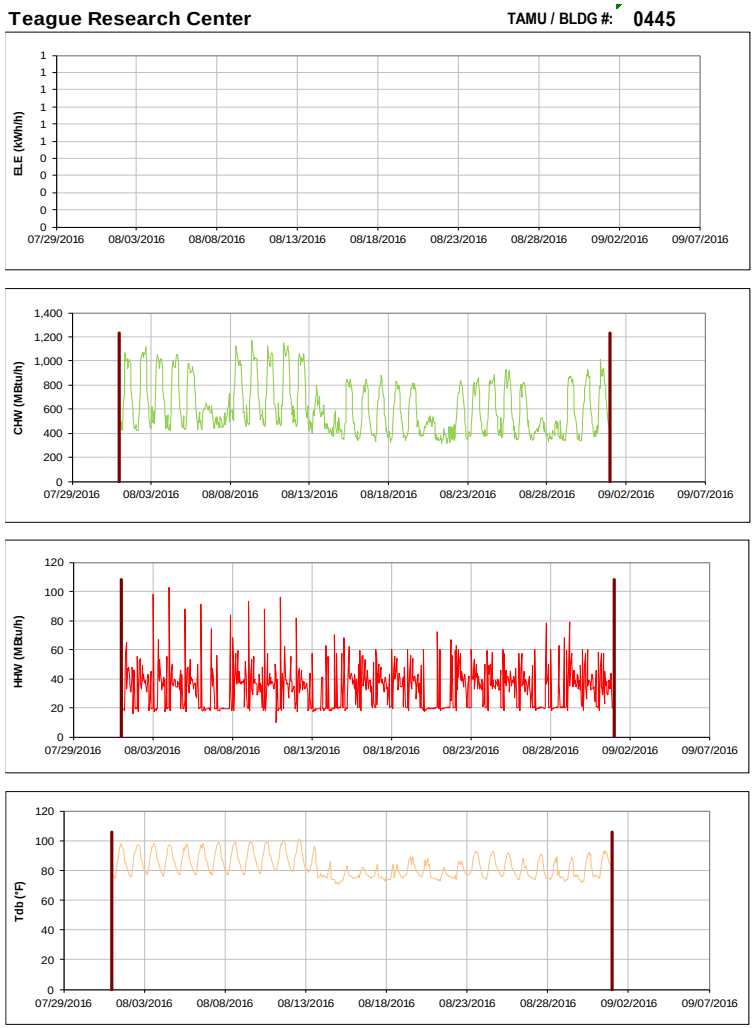


Figure III-65 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Teague Research Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

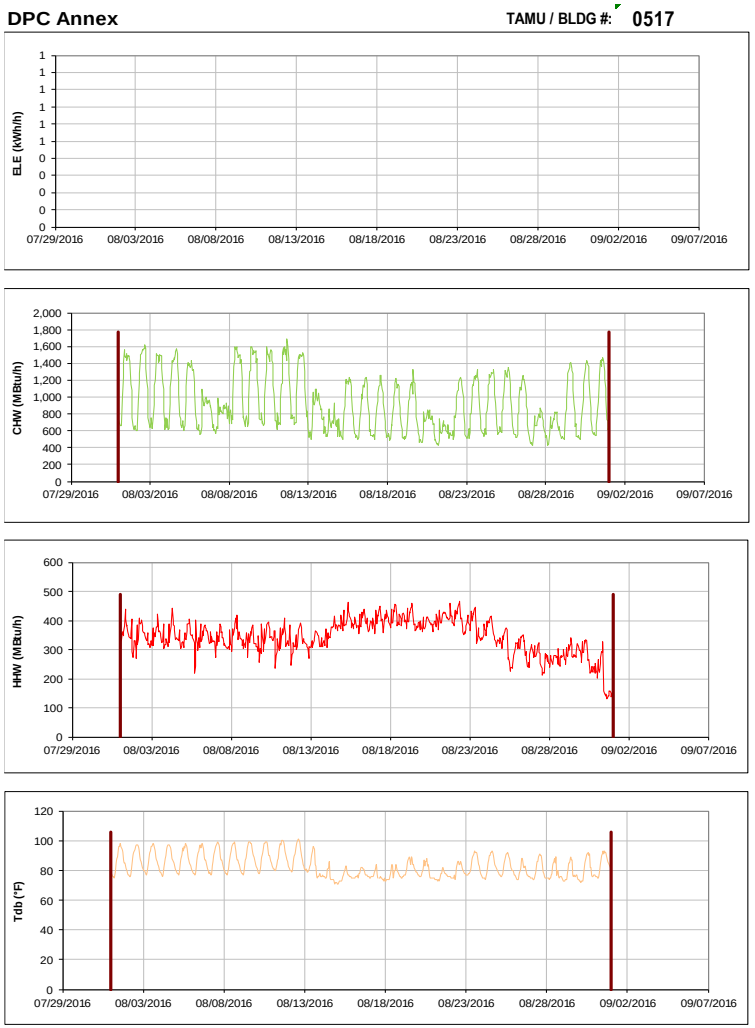


Figure III-66 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for DPC Annex during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

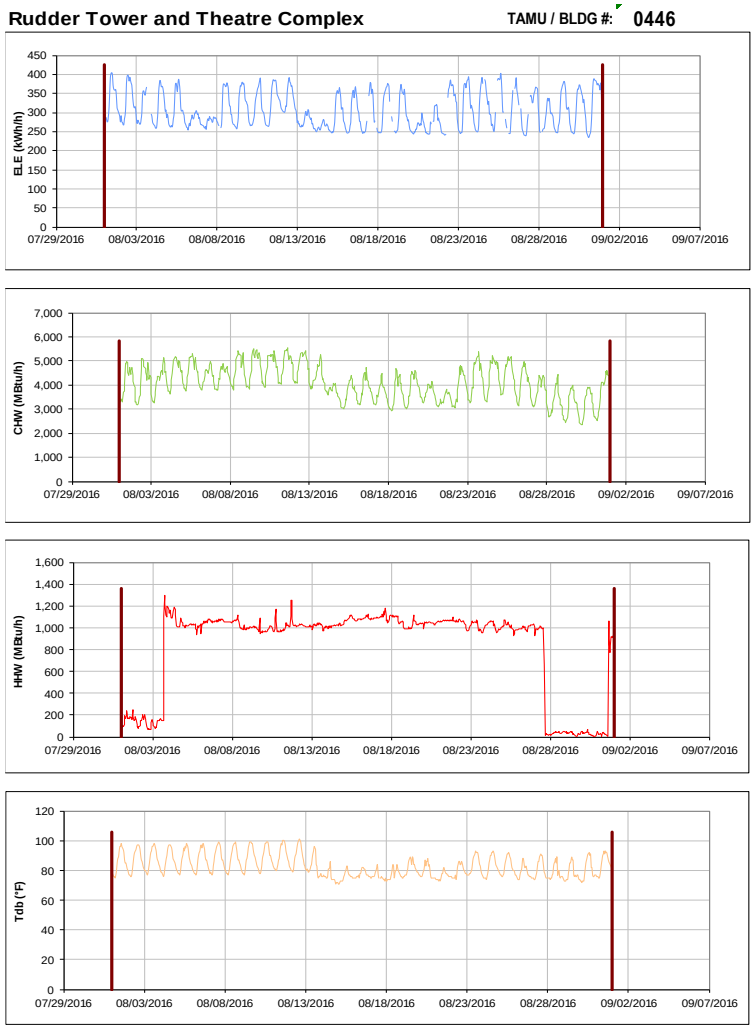


Figure III-67 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Tower and Theatre Complex during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

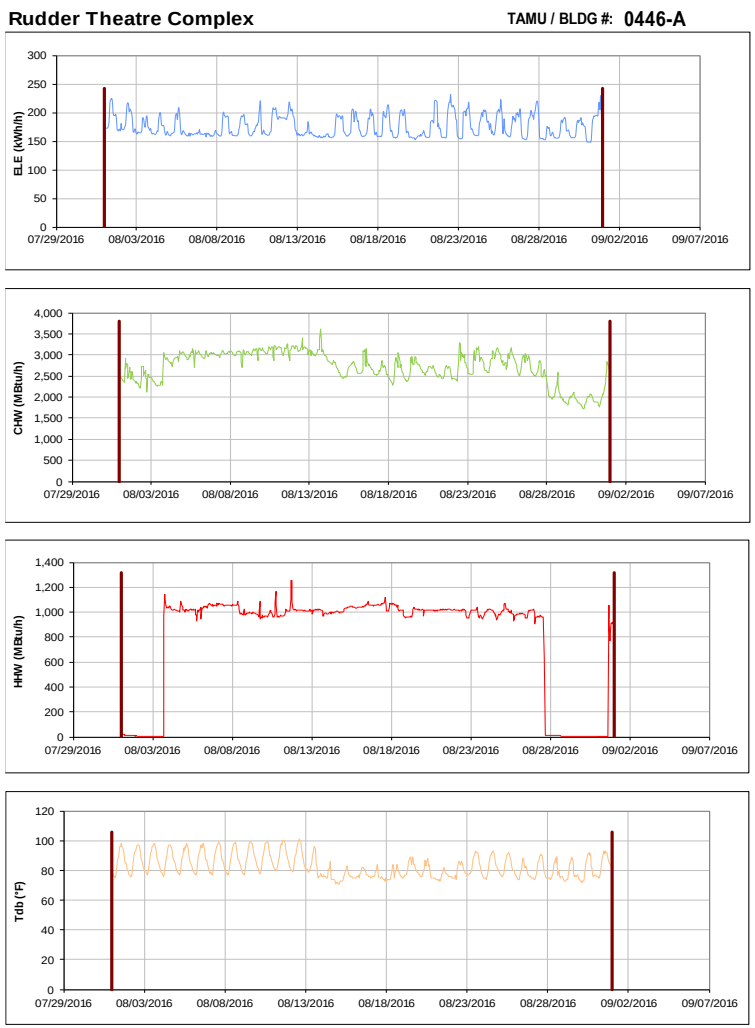


Figure III-68 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Theatre Complex during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

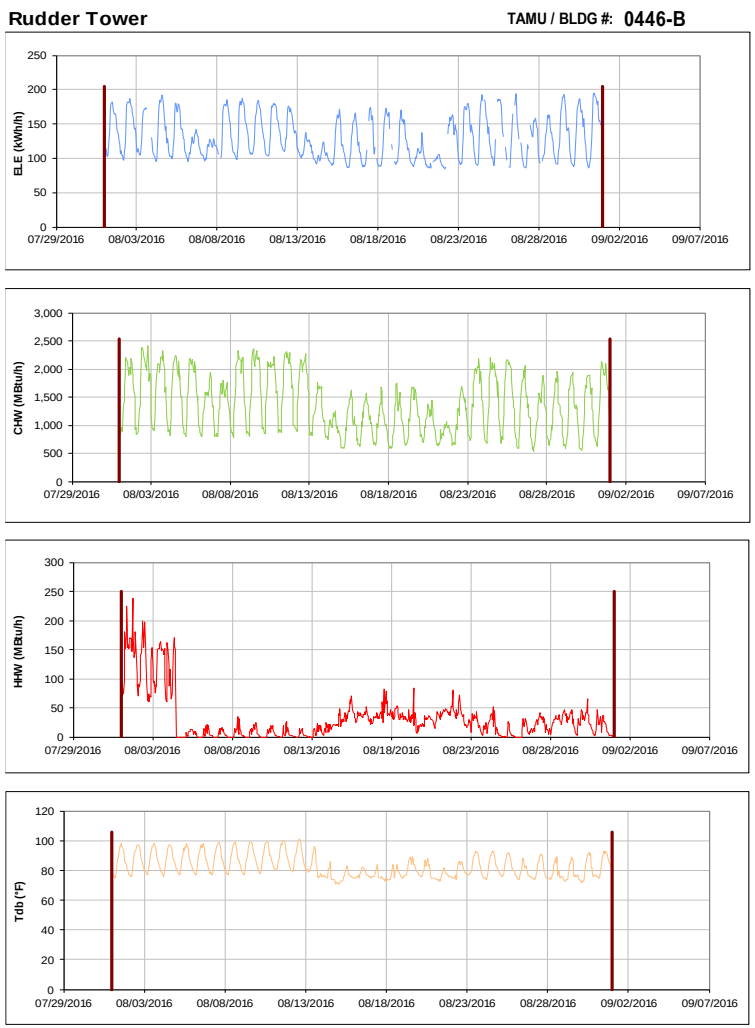


Figure III-69 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Tower during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

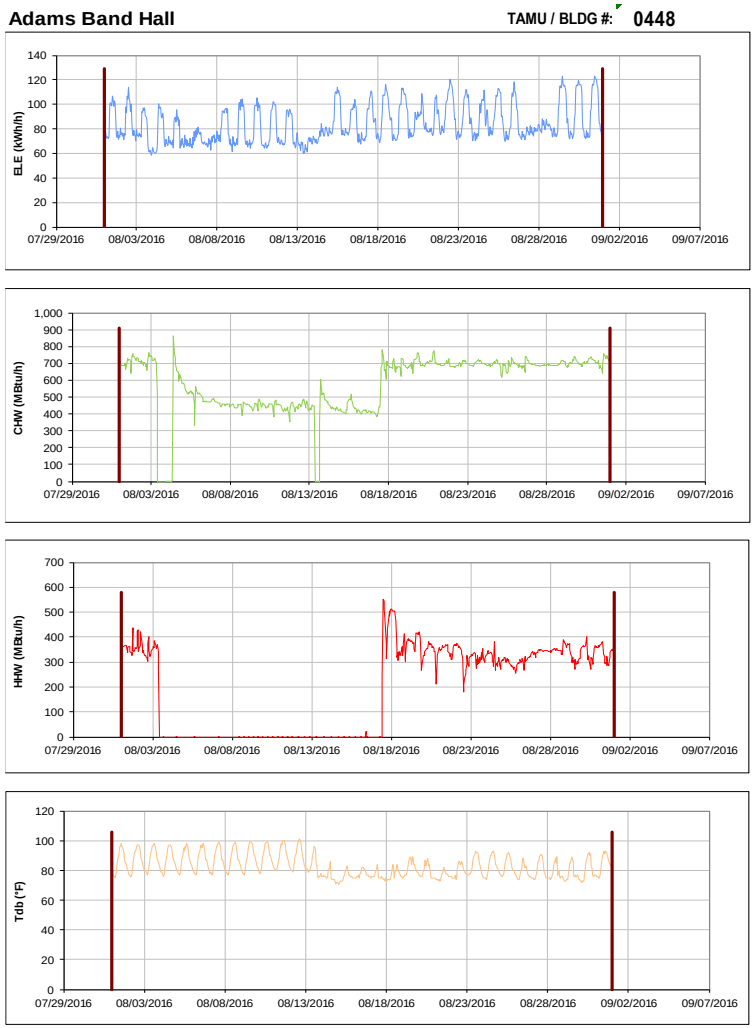


Figure III-70 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Adams Band Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

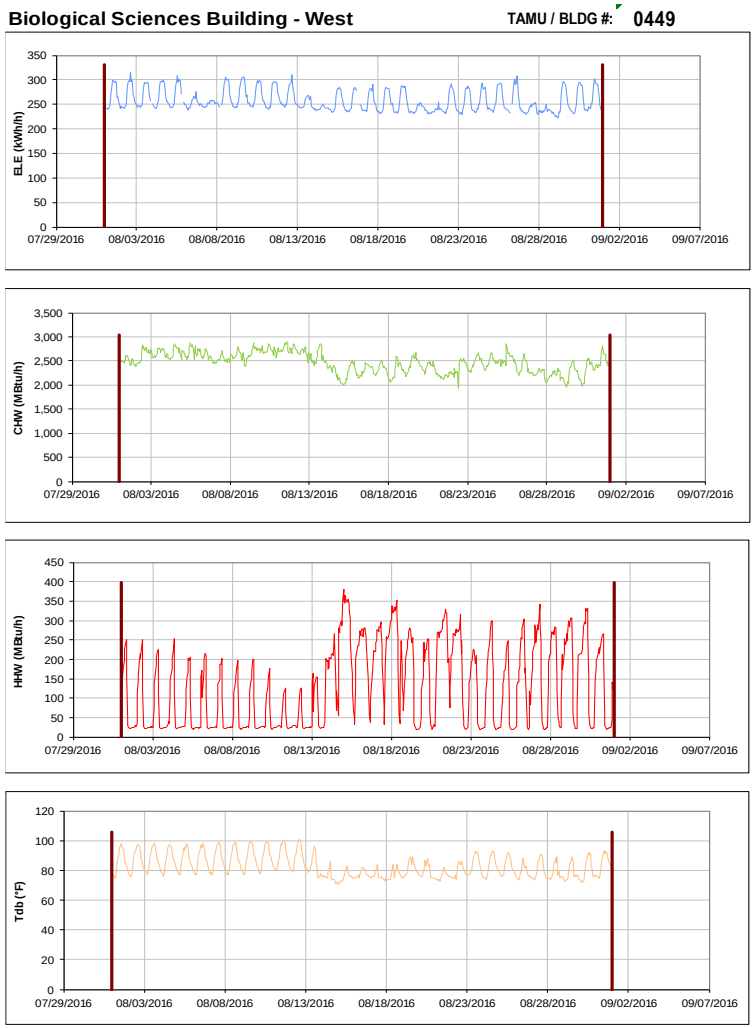


Figure III-71 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Sciences Building - West during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

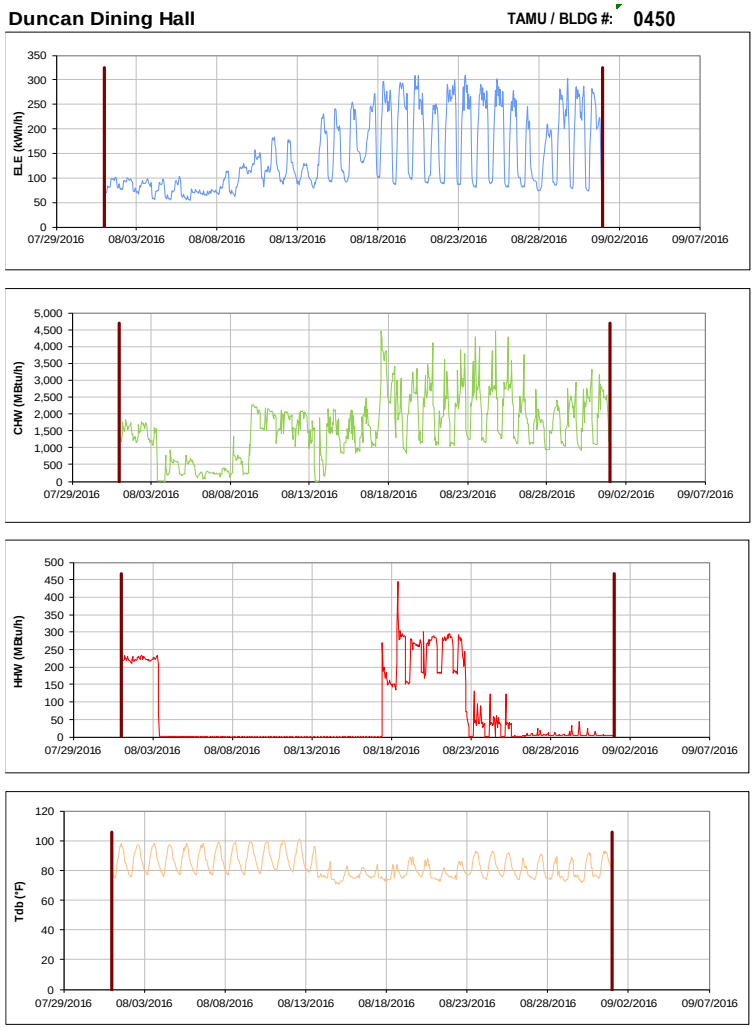


Figure III-72 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Duncan Dining Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

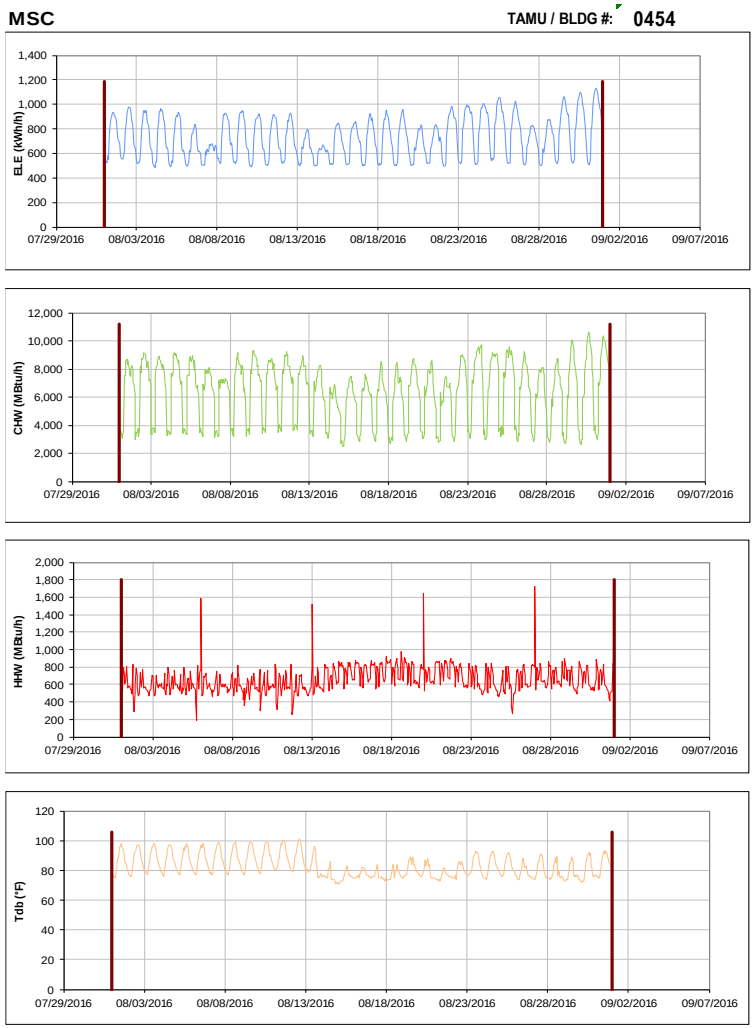


Figure III-73 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for MSC during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

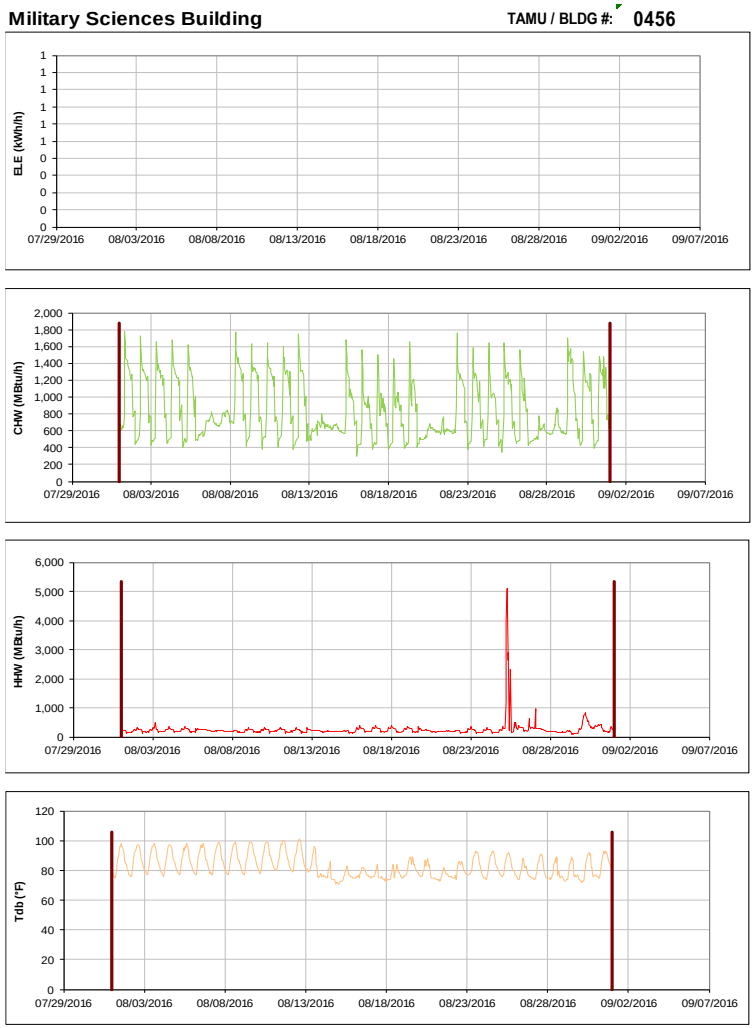


Figure III-74 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Military Sciences Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

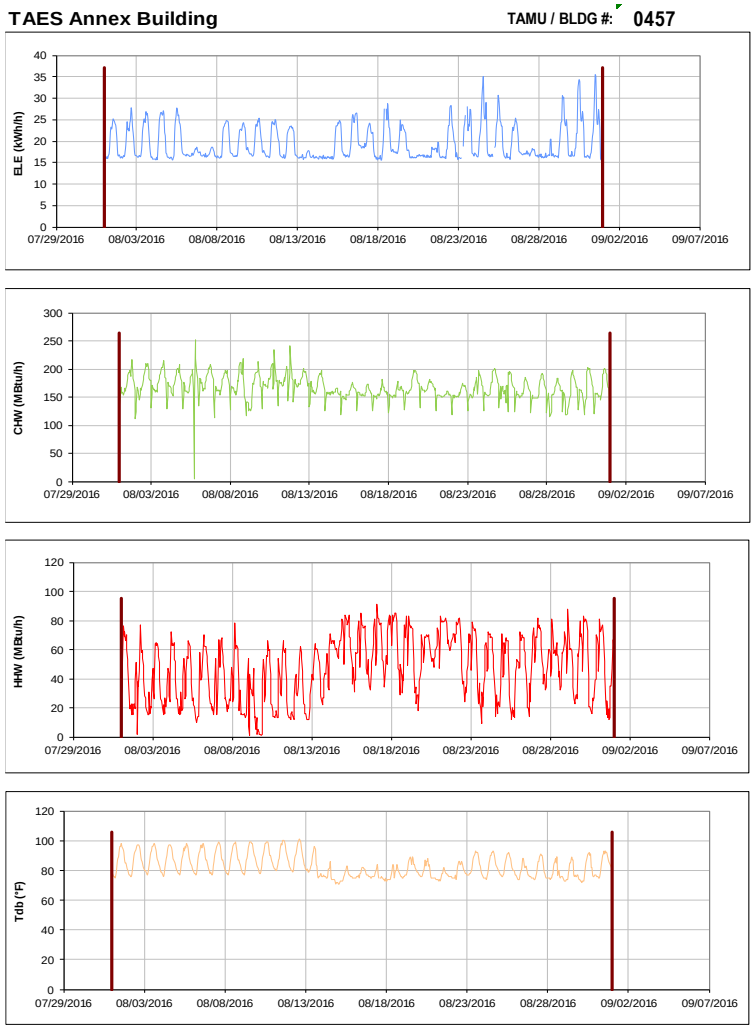


Figure III-75 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TAES Annex Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

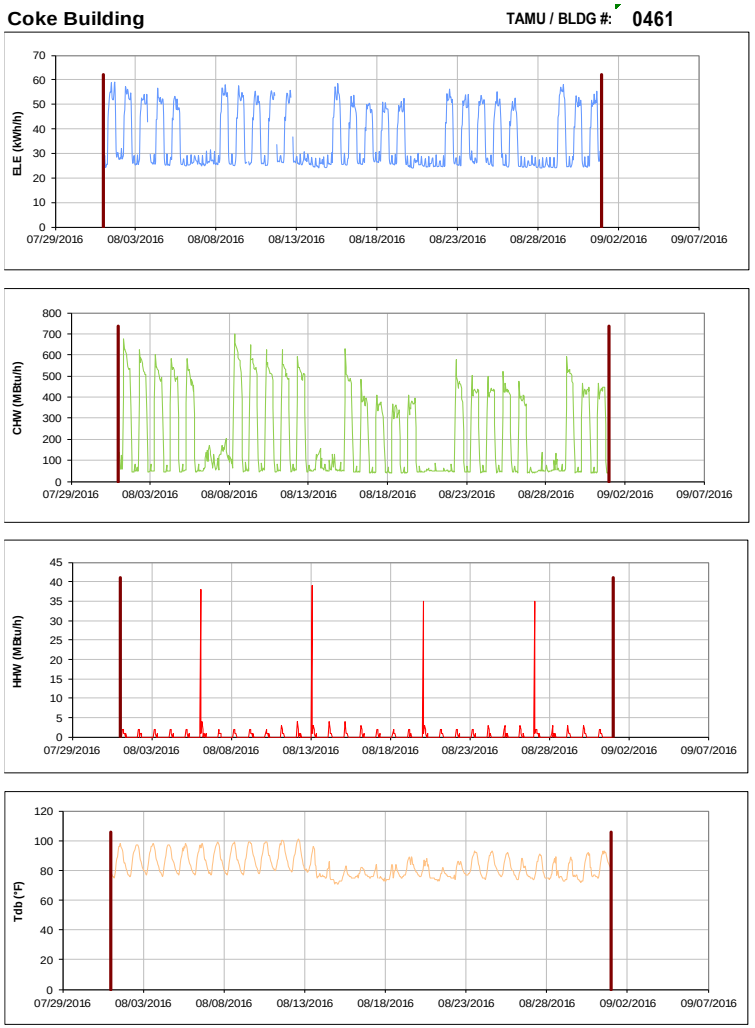


Figure III-76 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Coke Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

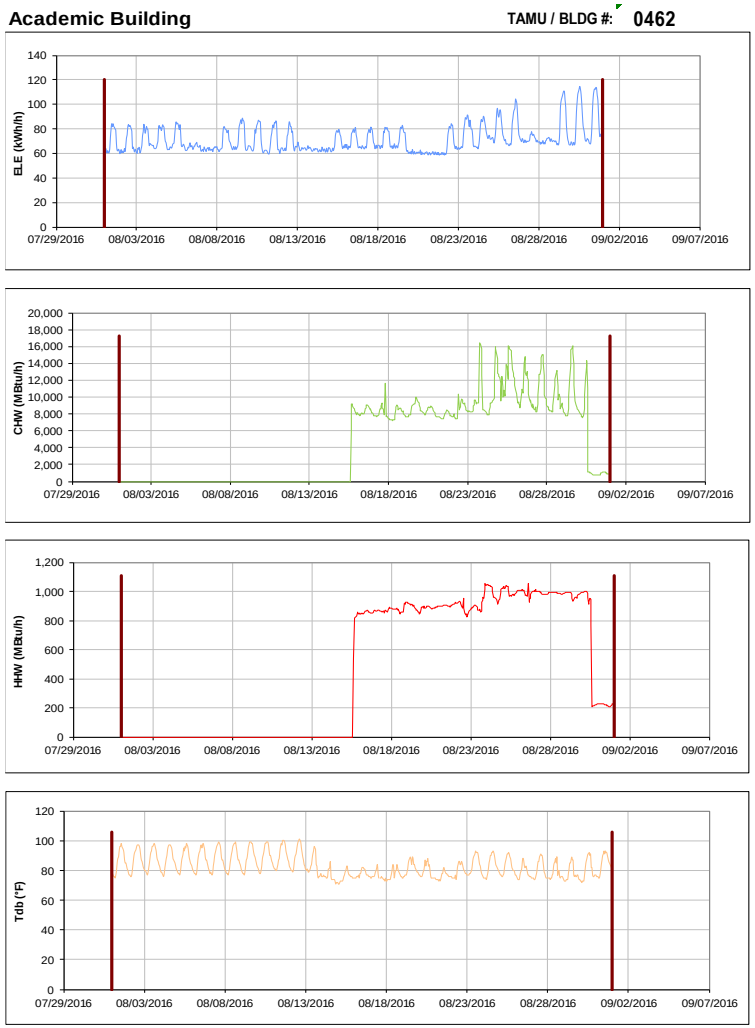


Figure III-77 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Academic Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

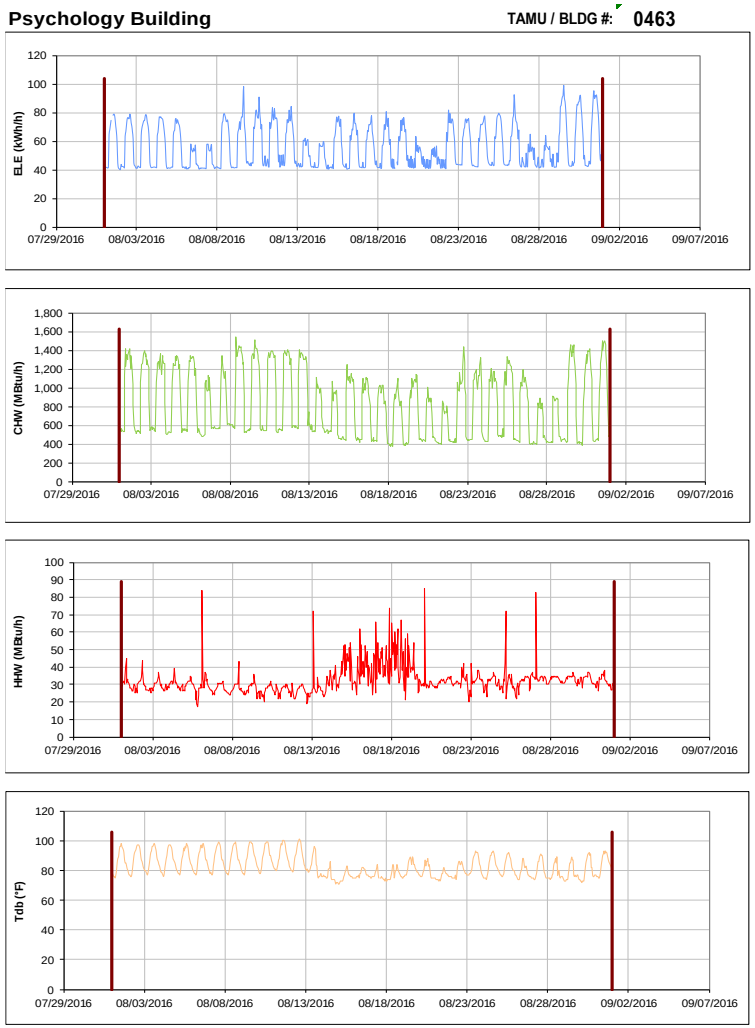


Figure III-78 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Psychology Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

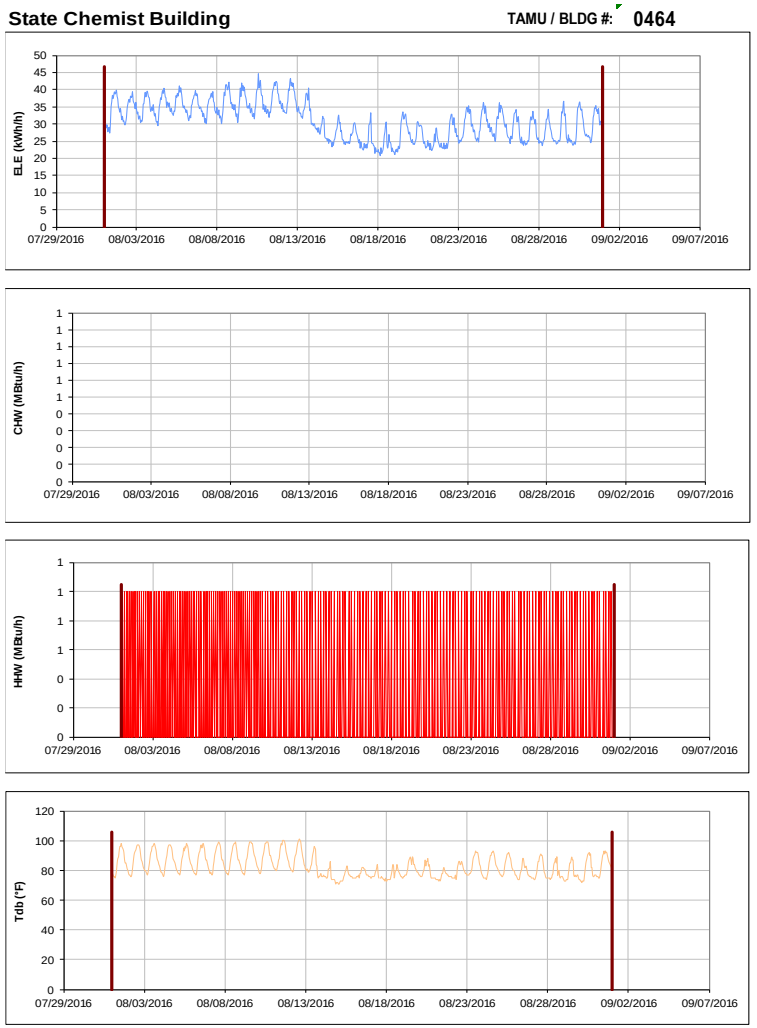


Figure III-79 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for State Chemist Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

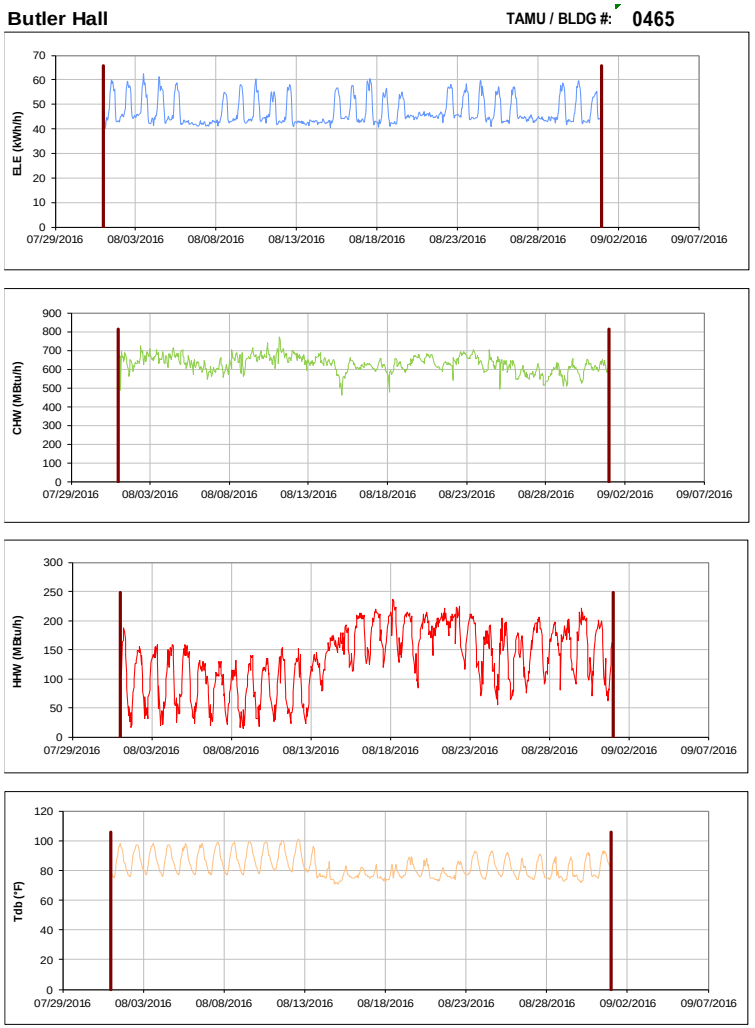


Figure III-80 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Butler Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

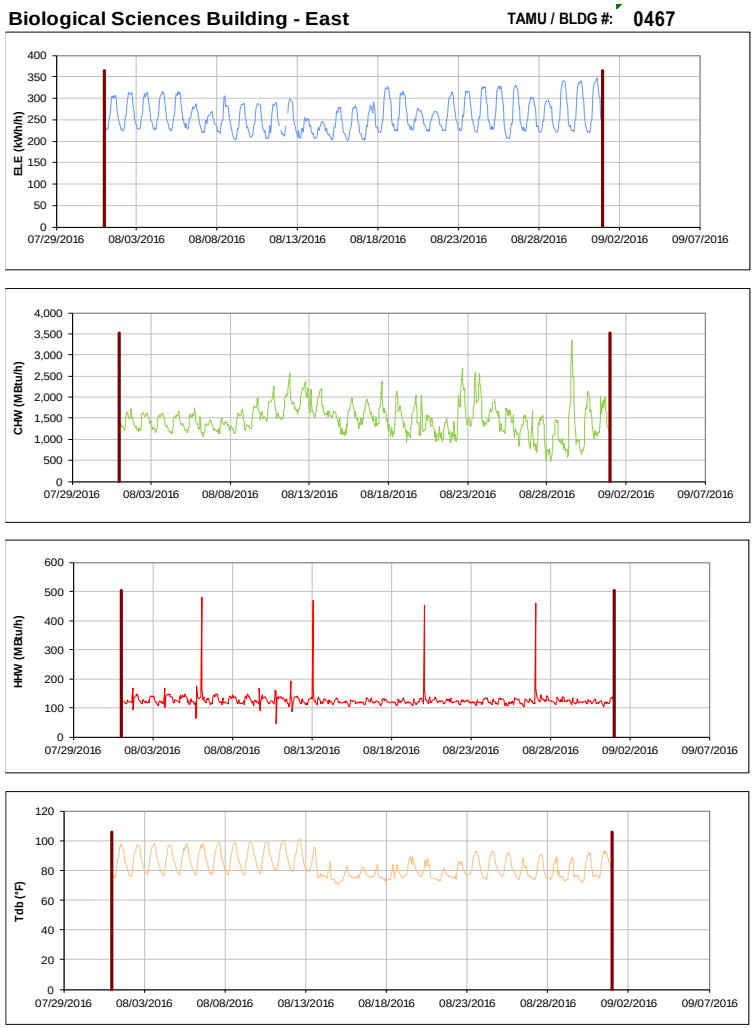


Figure III-81 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Sciences Building - East during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

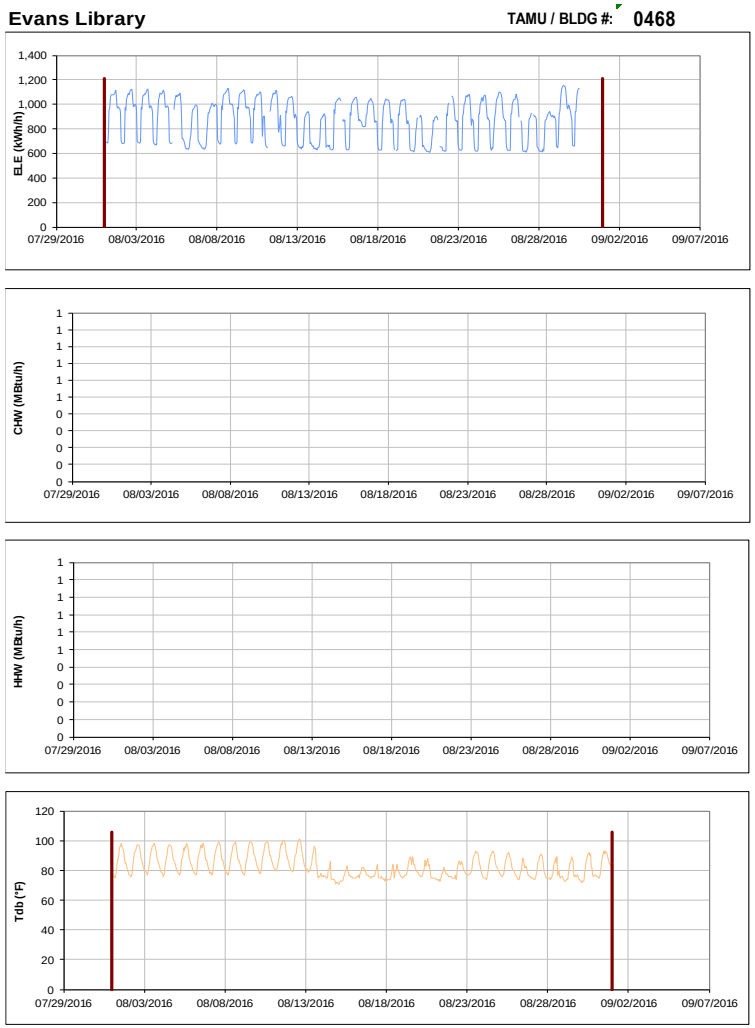


Figure III-82 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Evans Library during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

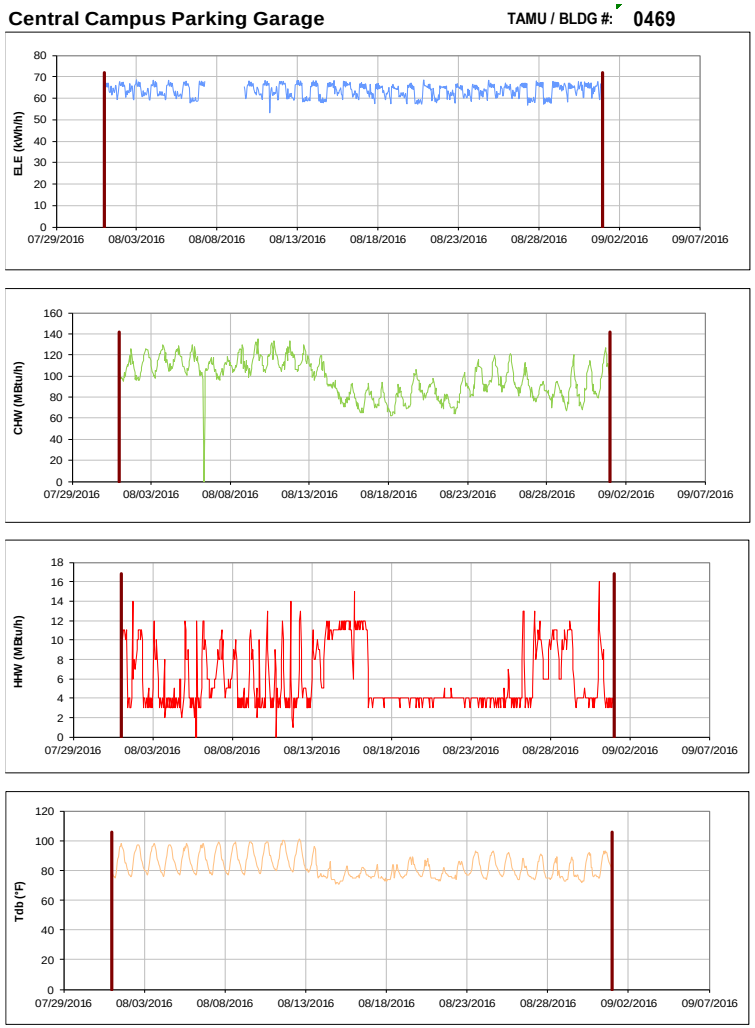


Figure III-83 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Central Campus Parking Garage during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

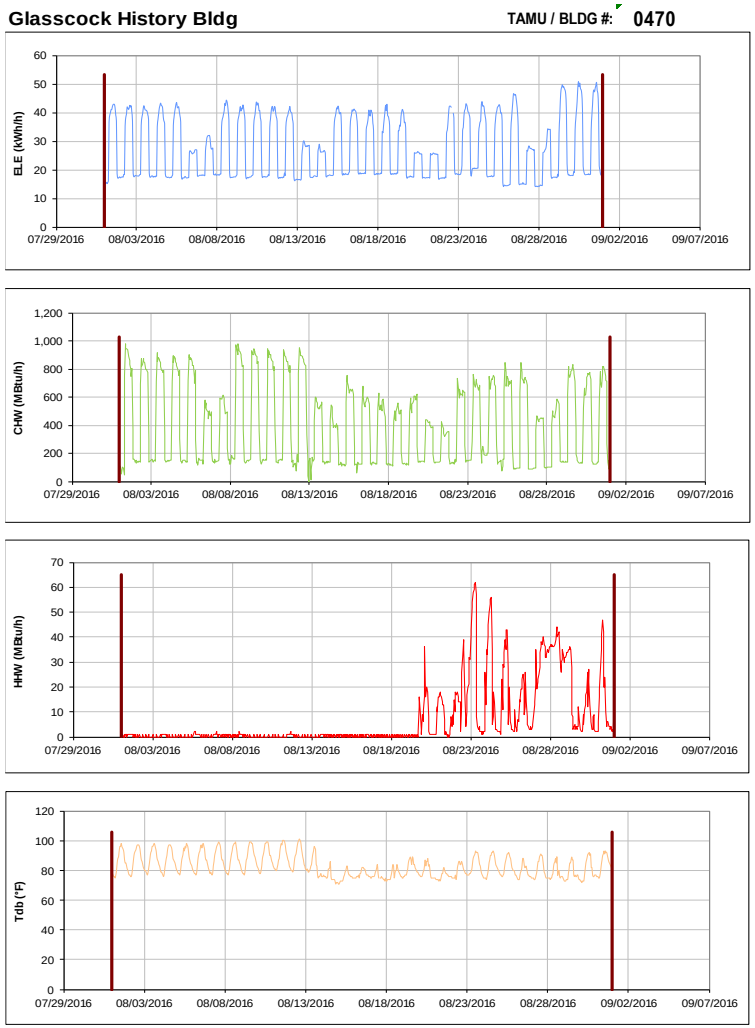


Figure III-84 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Glasscock History Bldg during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

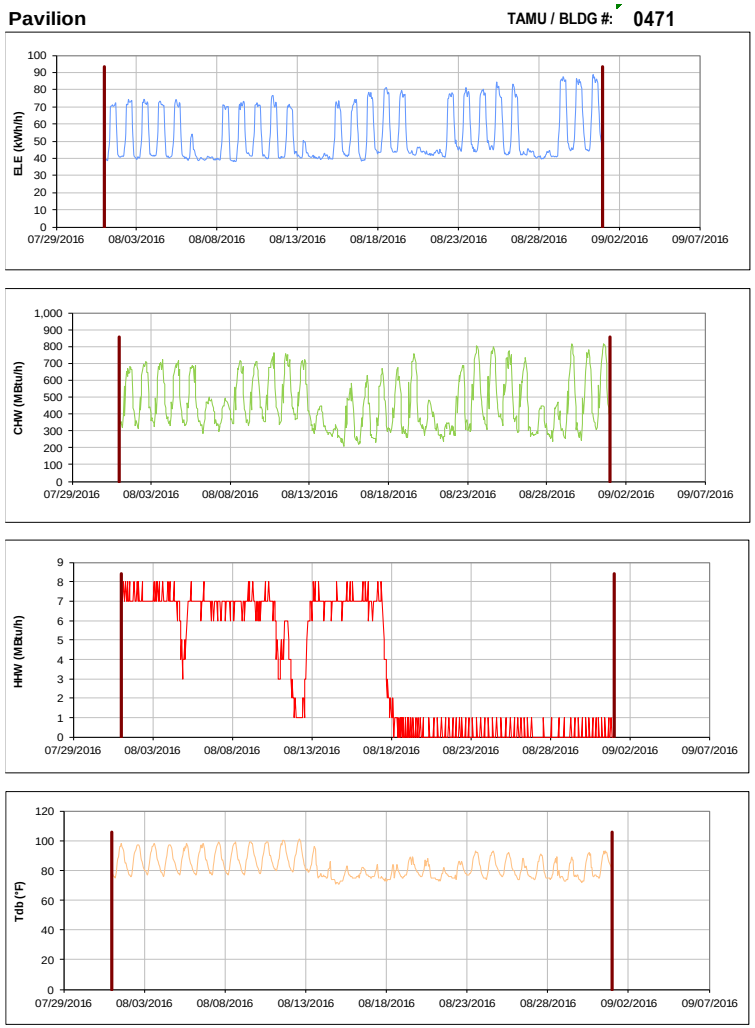


Figure III-85 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Pavilion during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

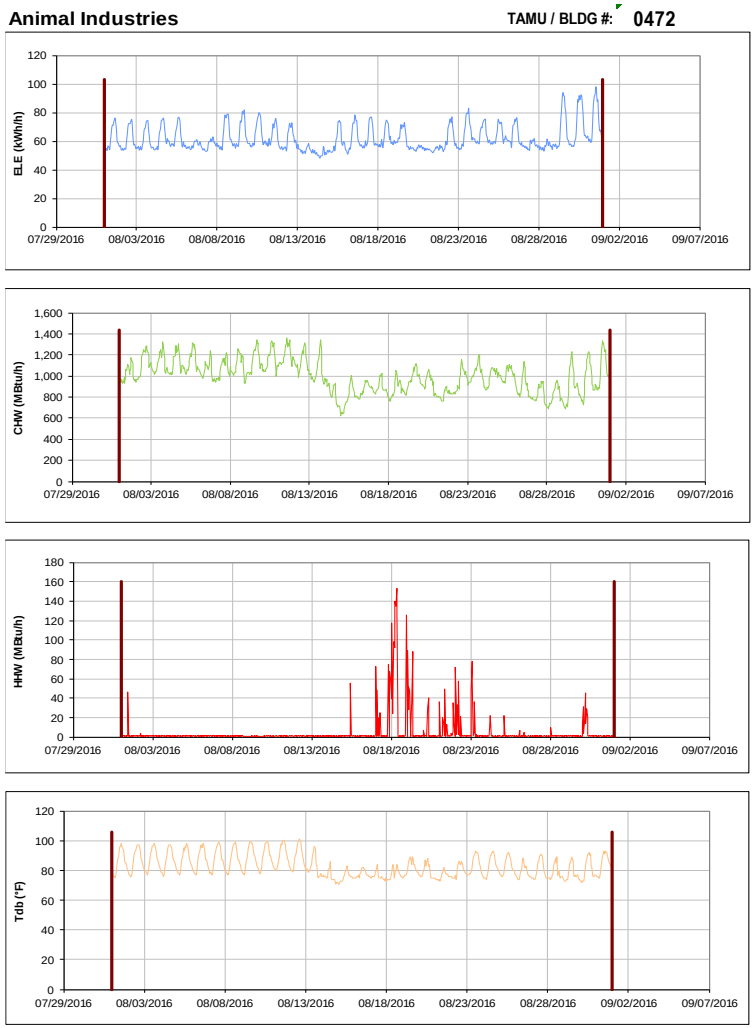


Figure III-86 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Animal Industries during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

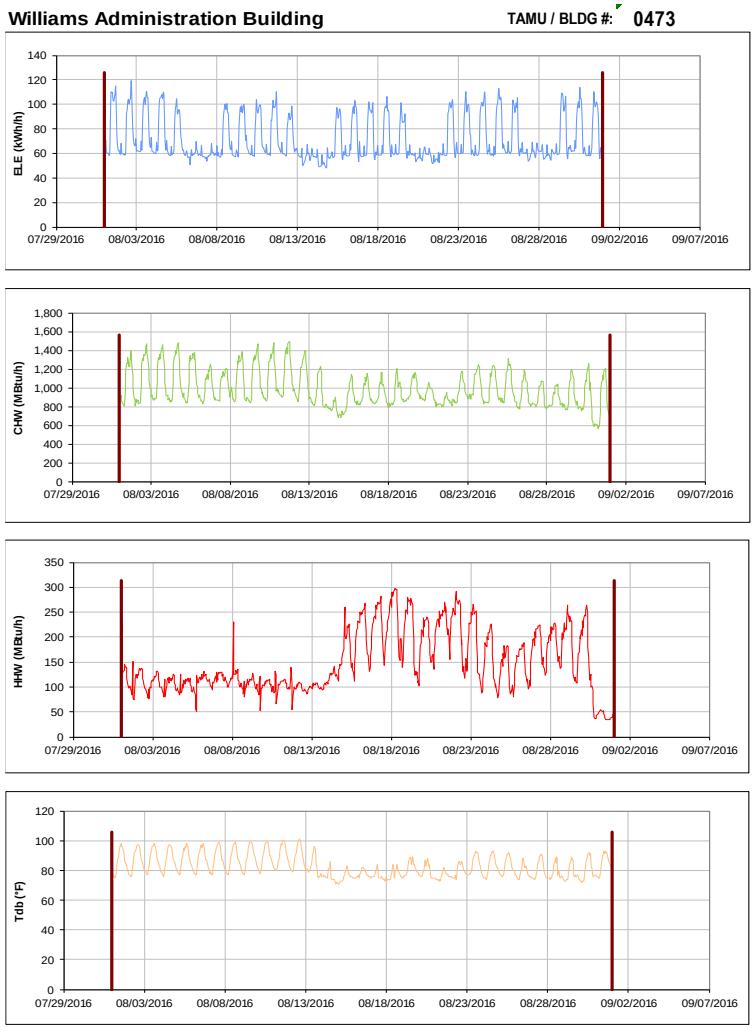


Figure III-87 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Williams Administration Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

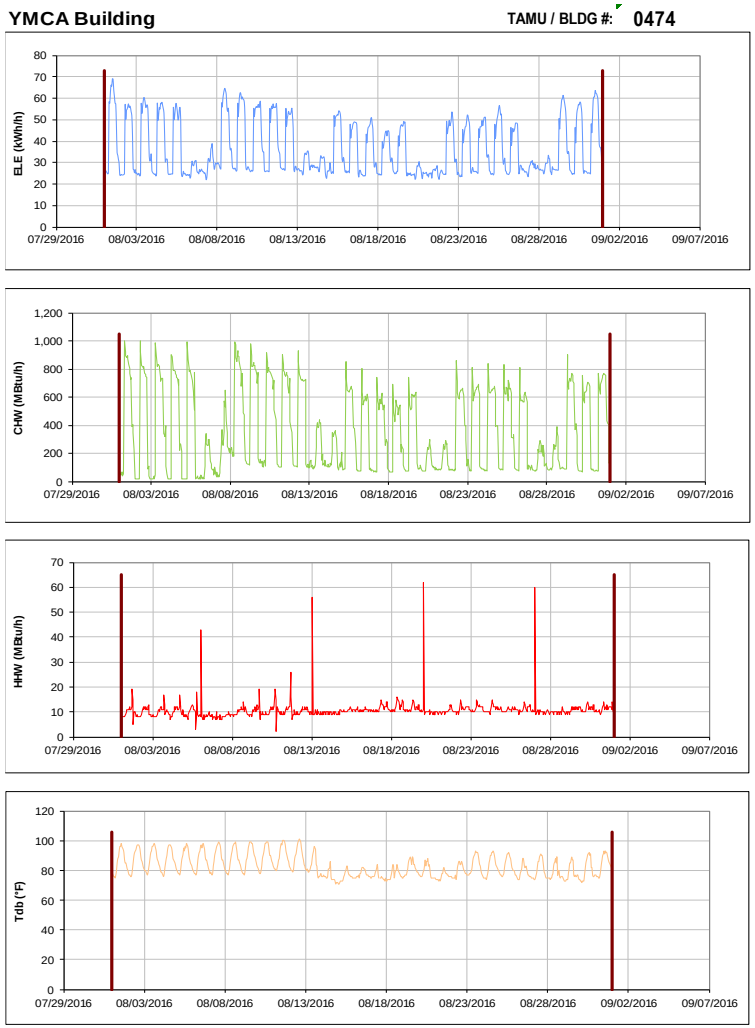


Figure III-88 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for YMCA Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

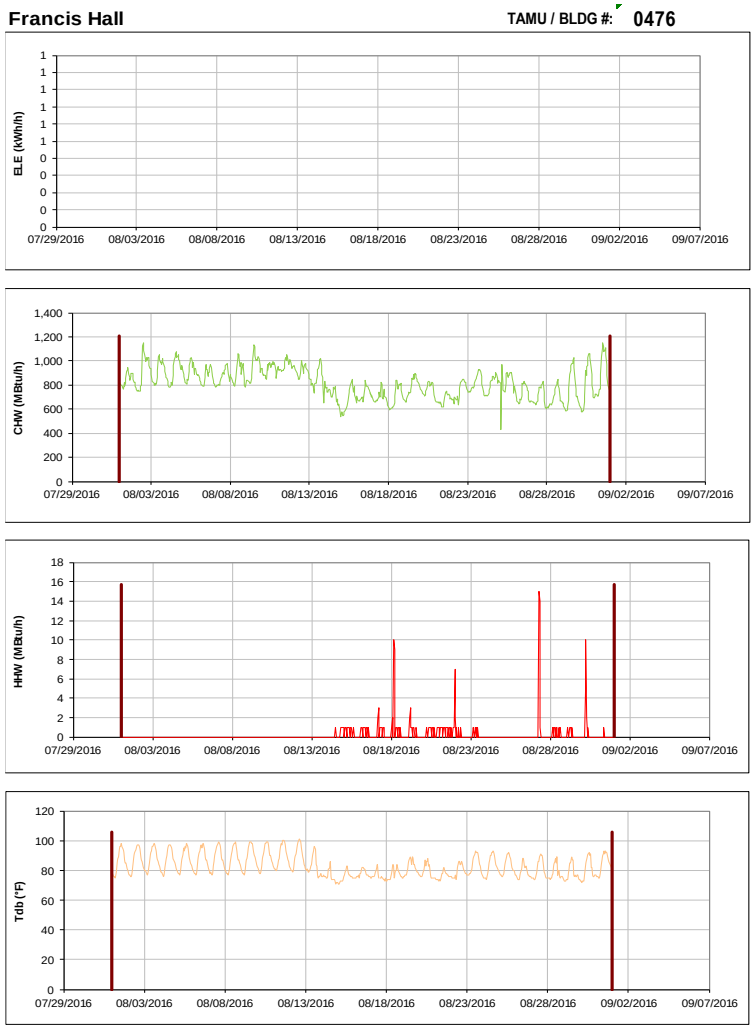


Figure III-89 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Francis Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

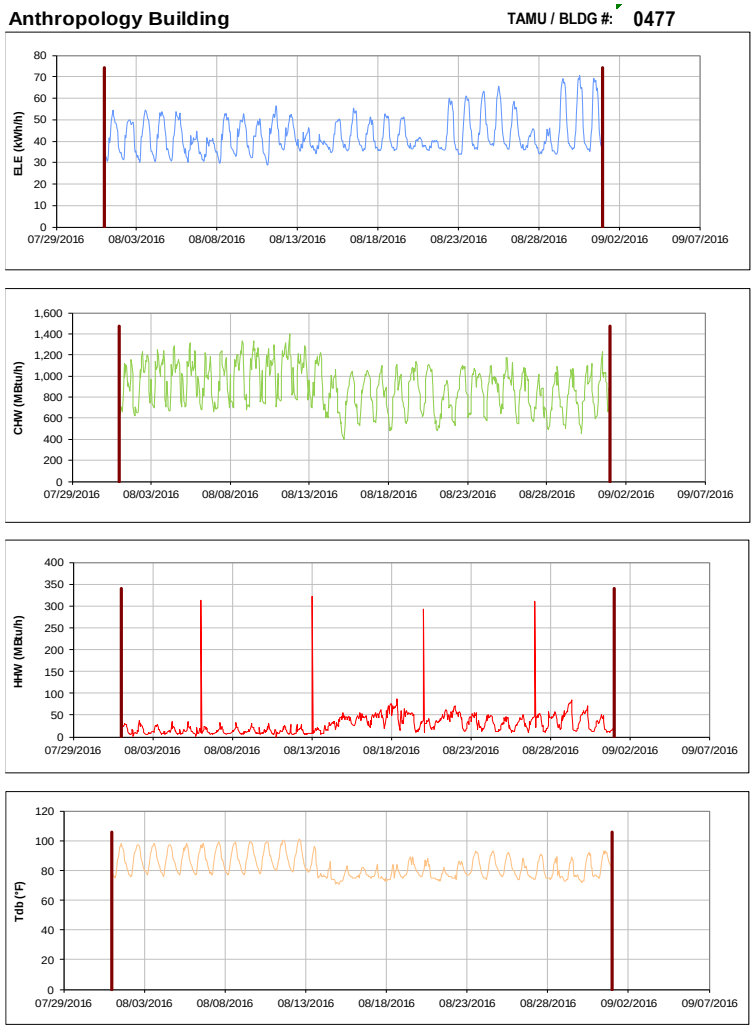


Figure III-90 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Anthropology Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

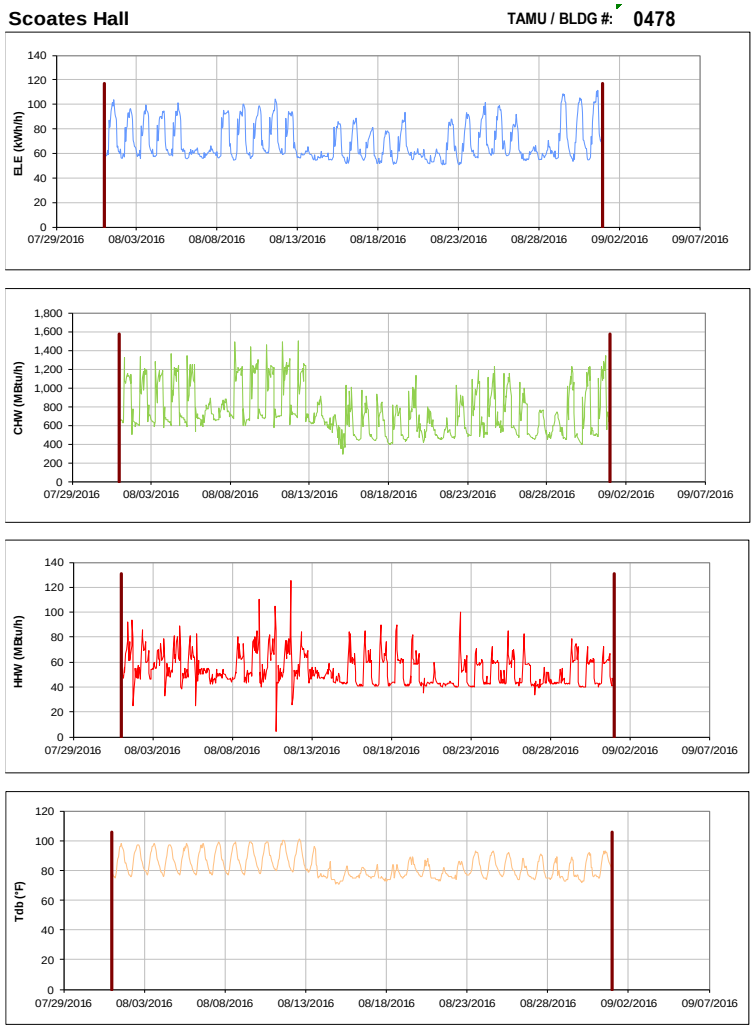


Figure III-91 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Scoates Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

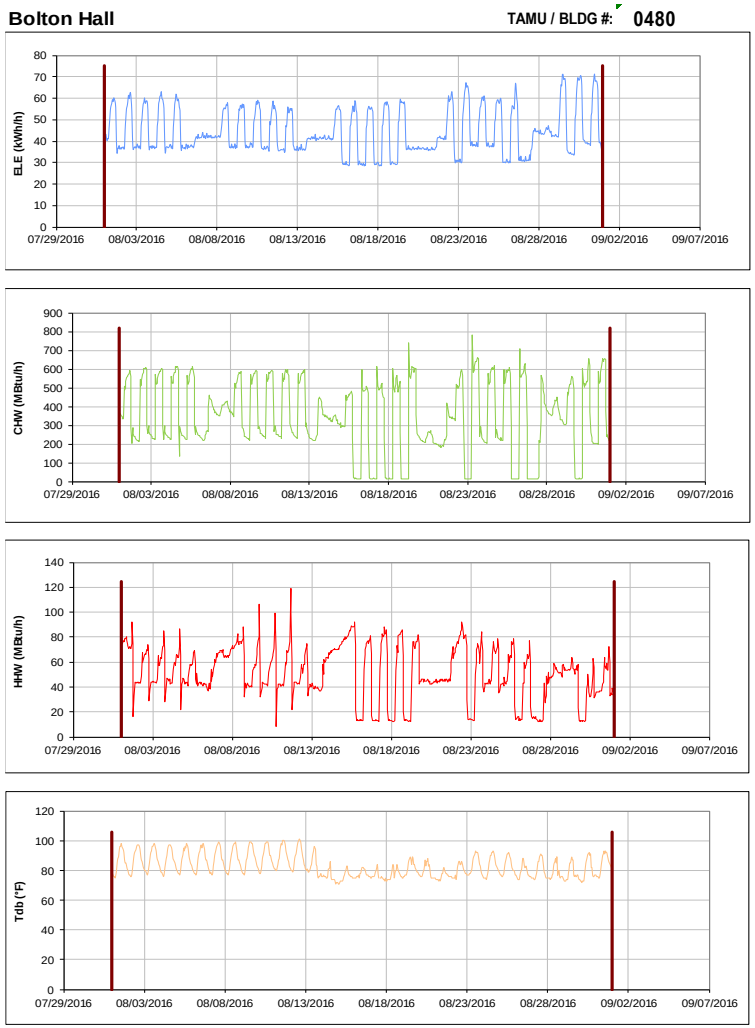


Figure III-92 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bolton Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

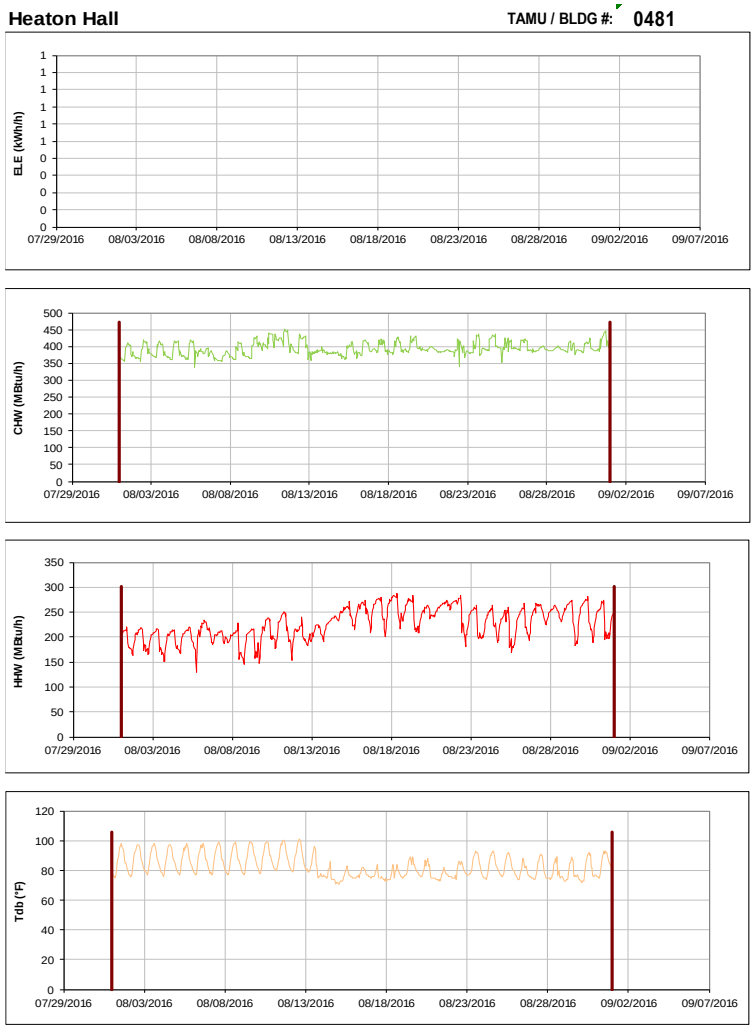


Figure III-93 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heaton Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

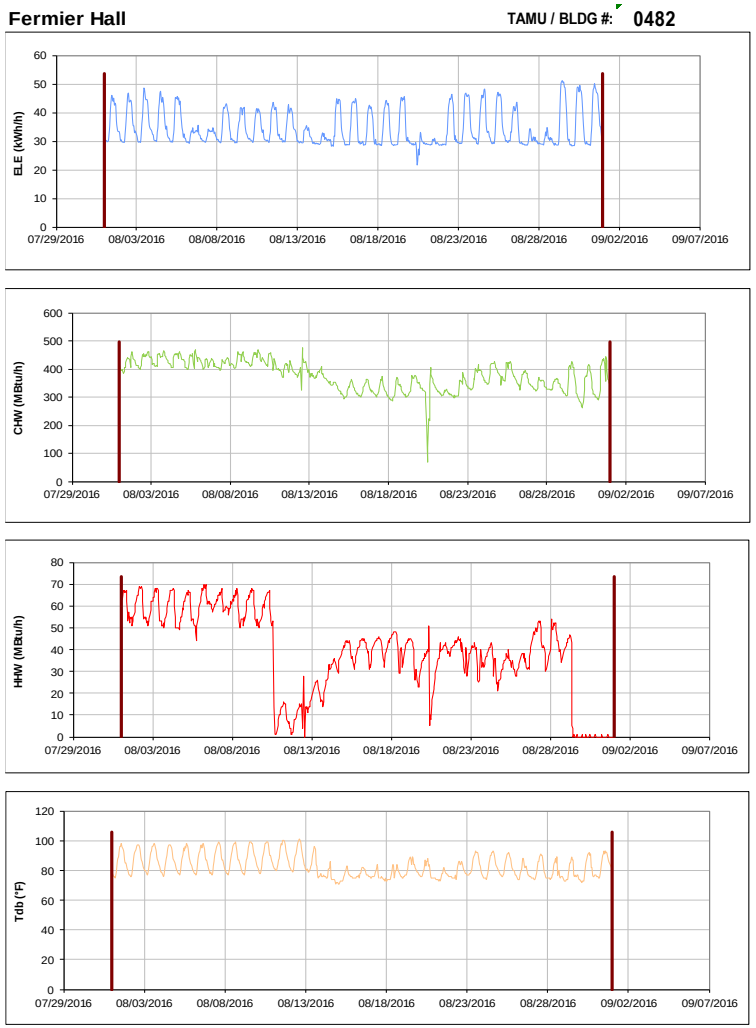


Figure III-94 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Fermier Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

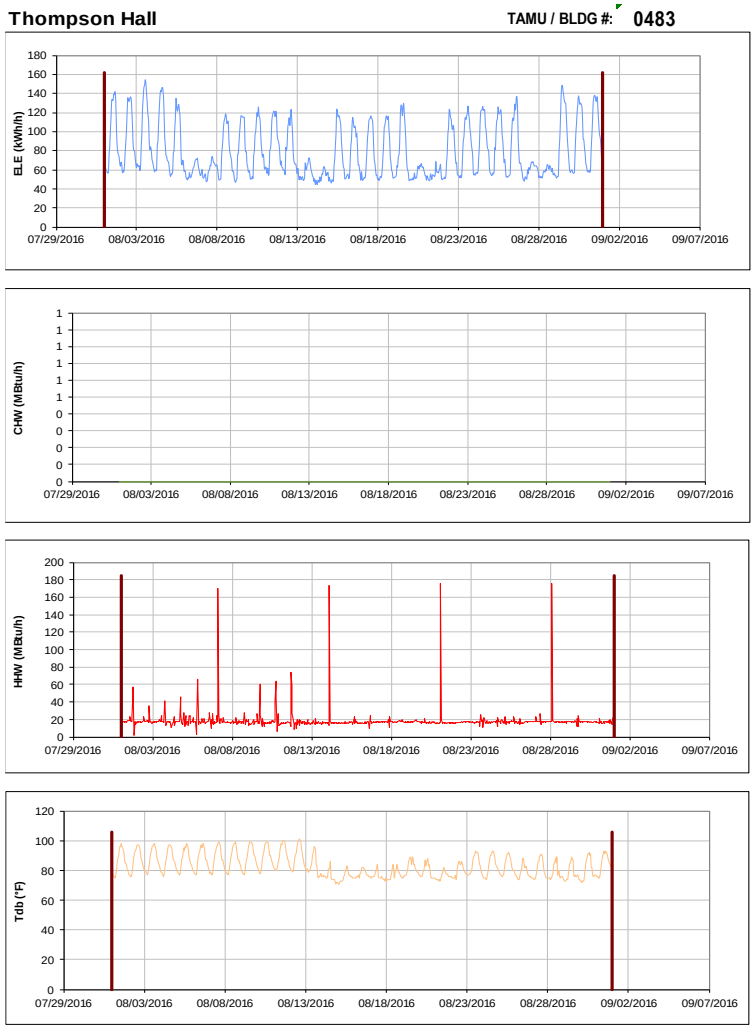


Figure III-95 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Thompson Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

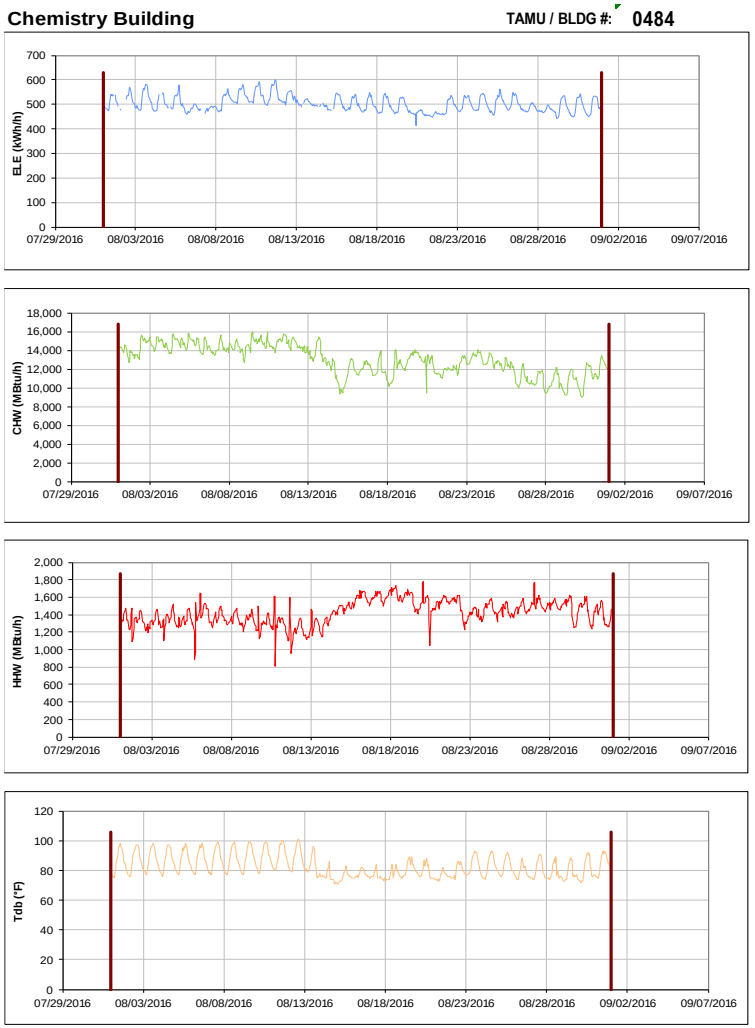


Figure III-96 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Chemistry Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

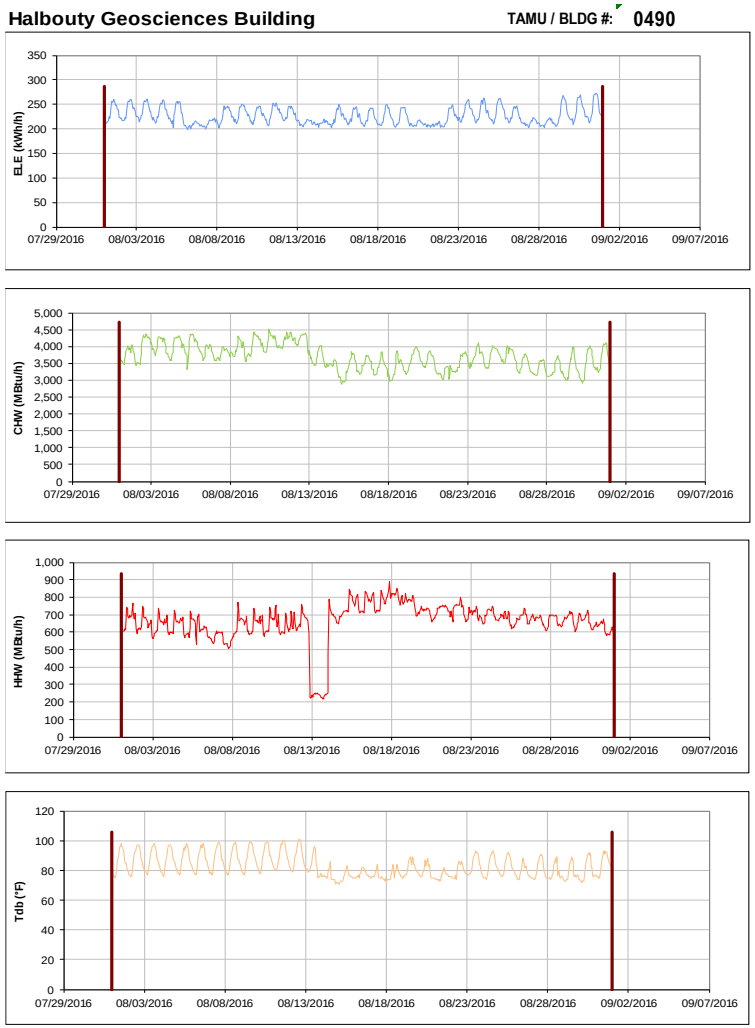


Figure III-97 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Halbouty Geosciences Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

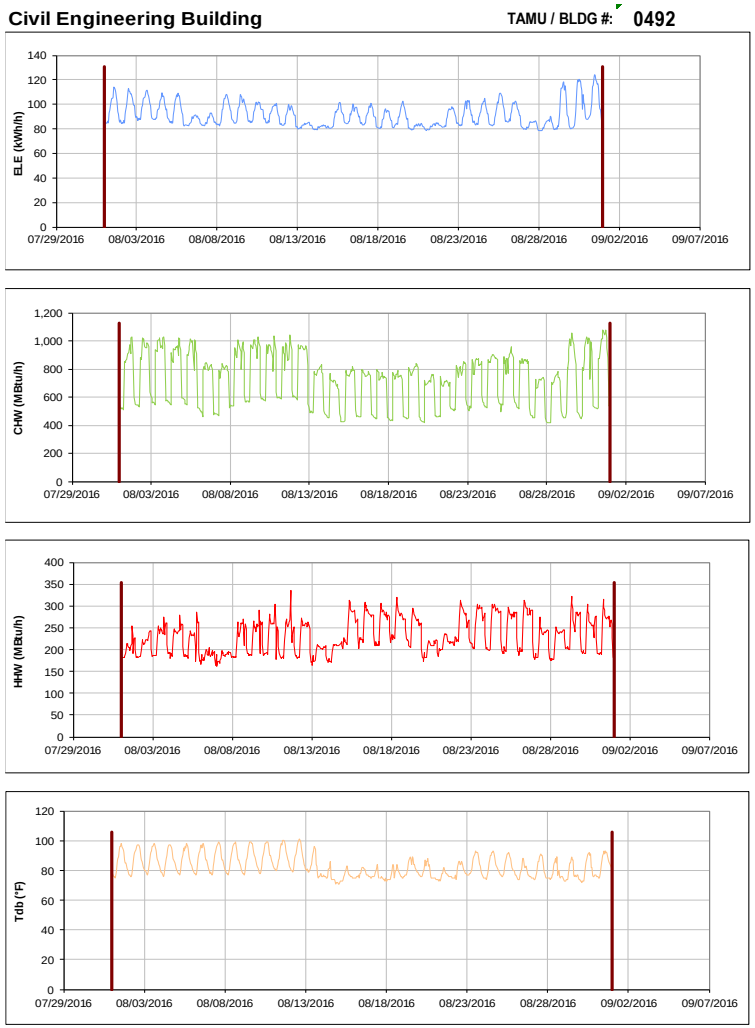


Figure III-98 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Civil Engineering Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

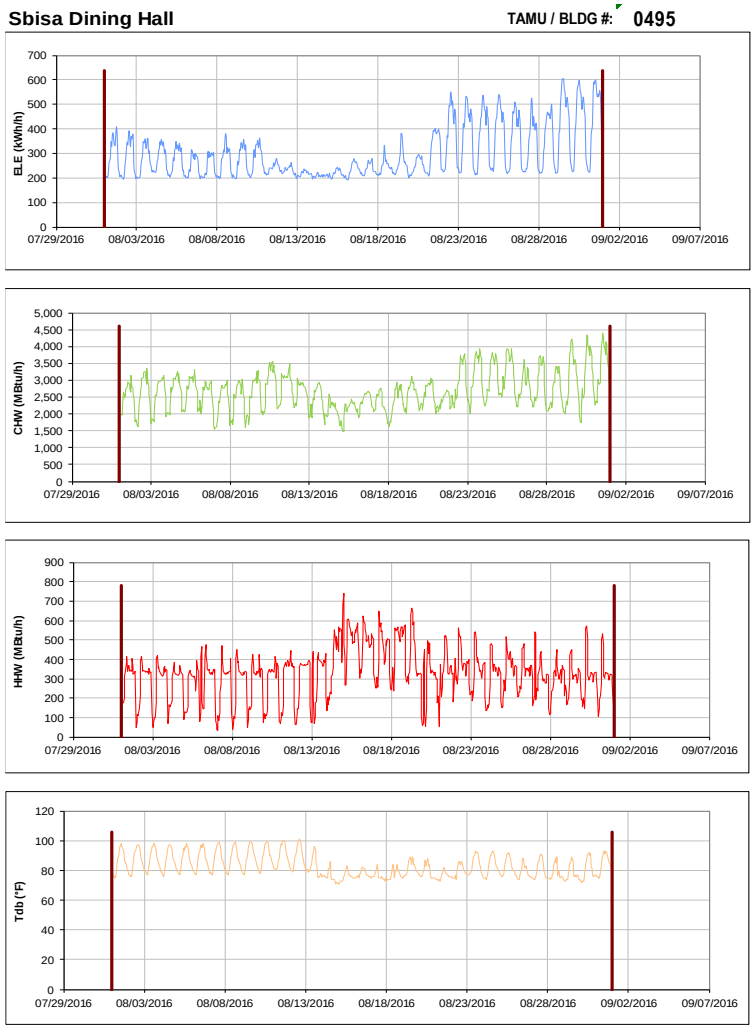


Figure III-99 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Sbisa Dining Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

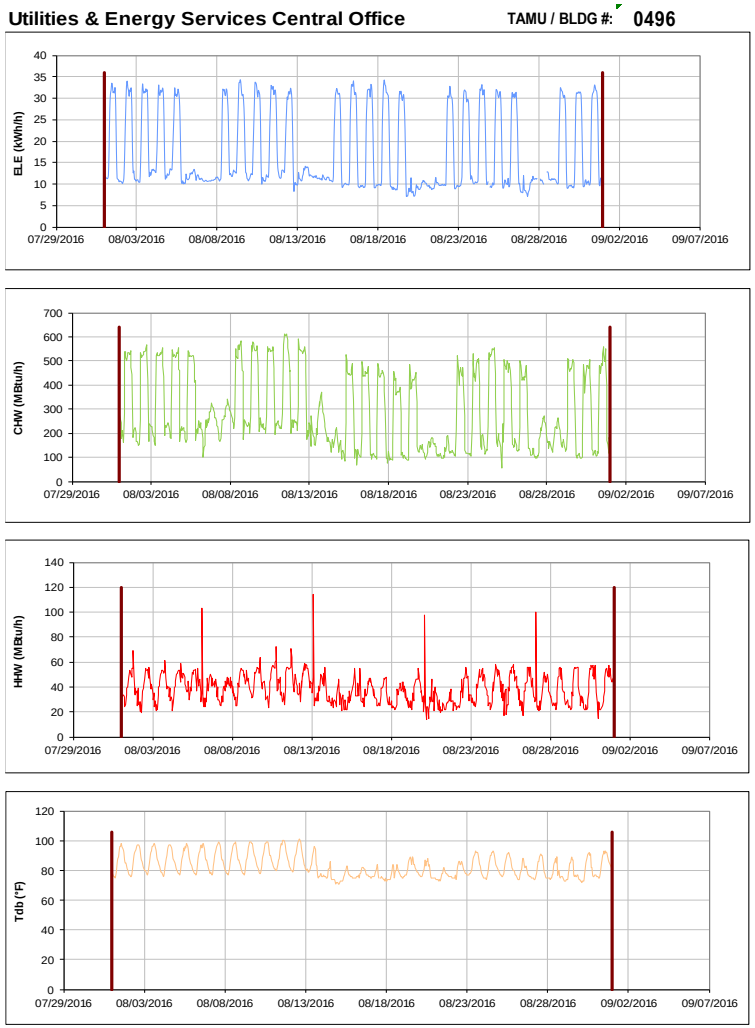


Figure III-100 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities & Energy Services Central Office during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

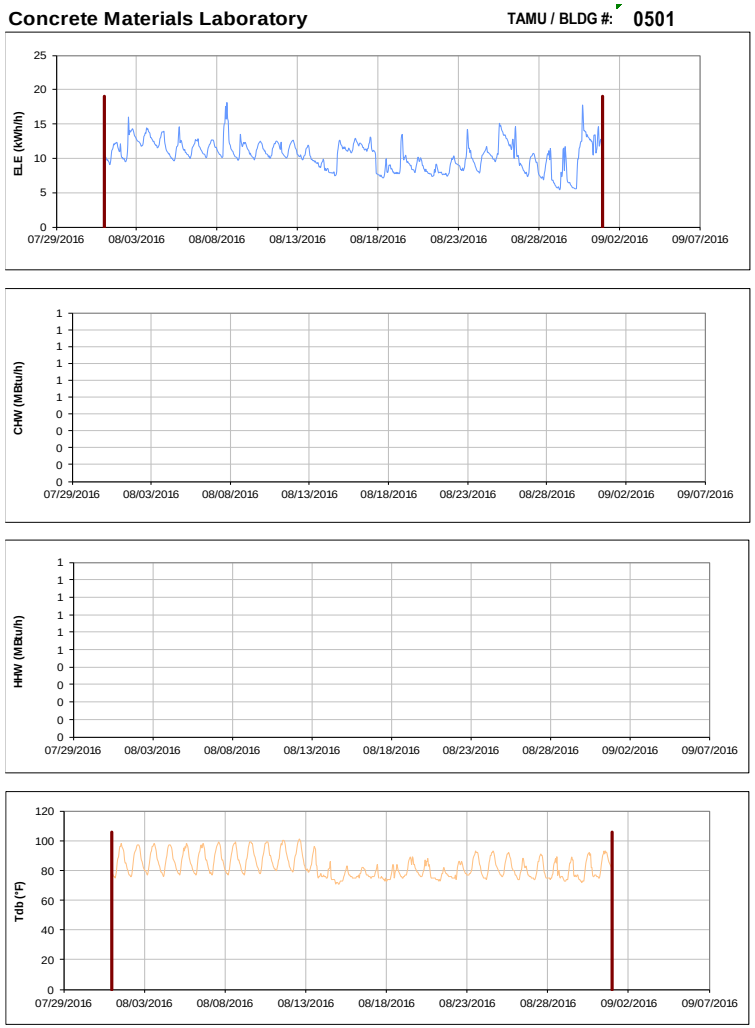


Figure III-101 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Concrete Materials Laboratory during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

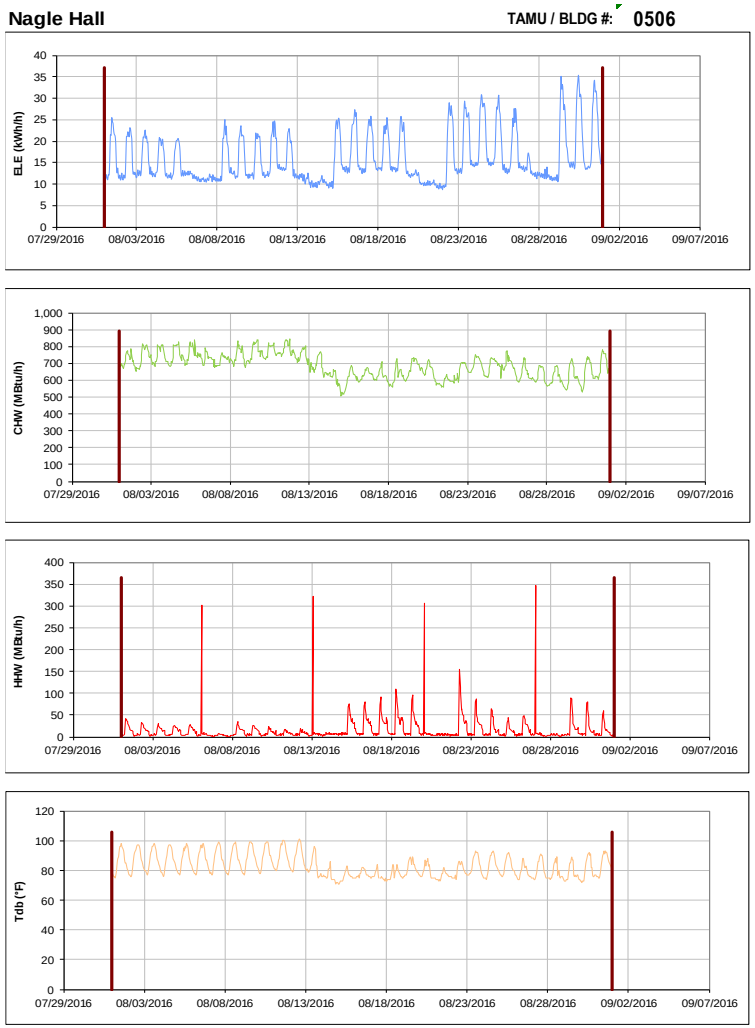


Figure III-102 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Nagle Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

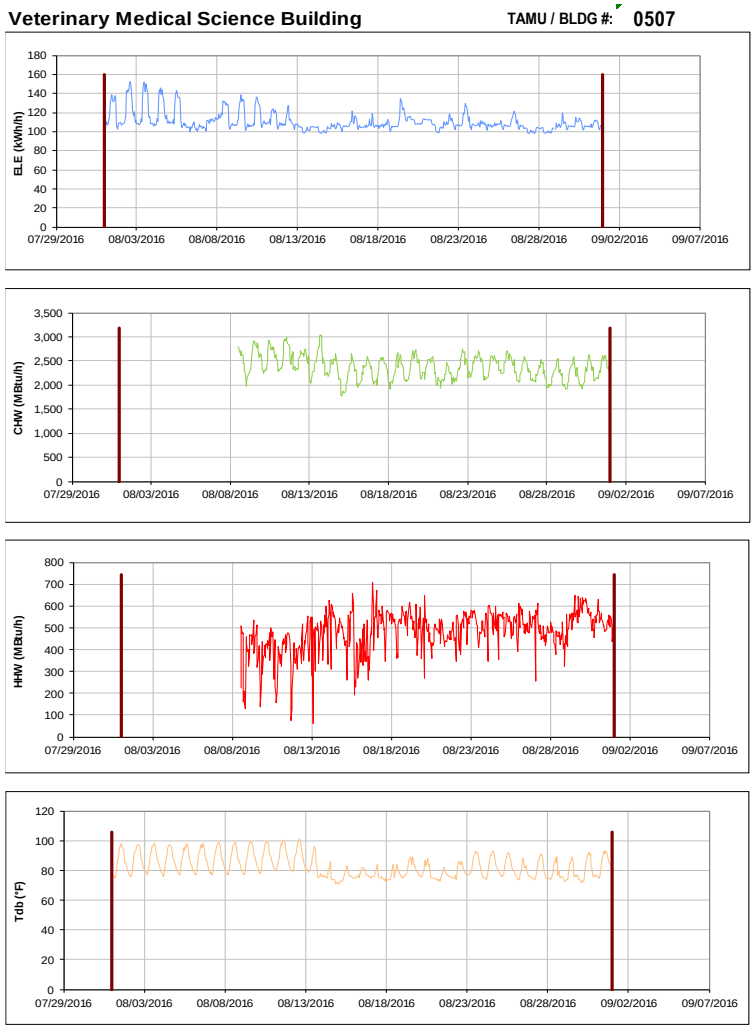


Figure III-103 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Medical Science Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

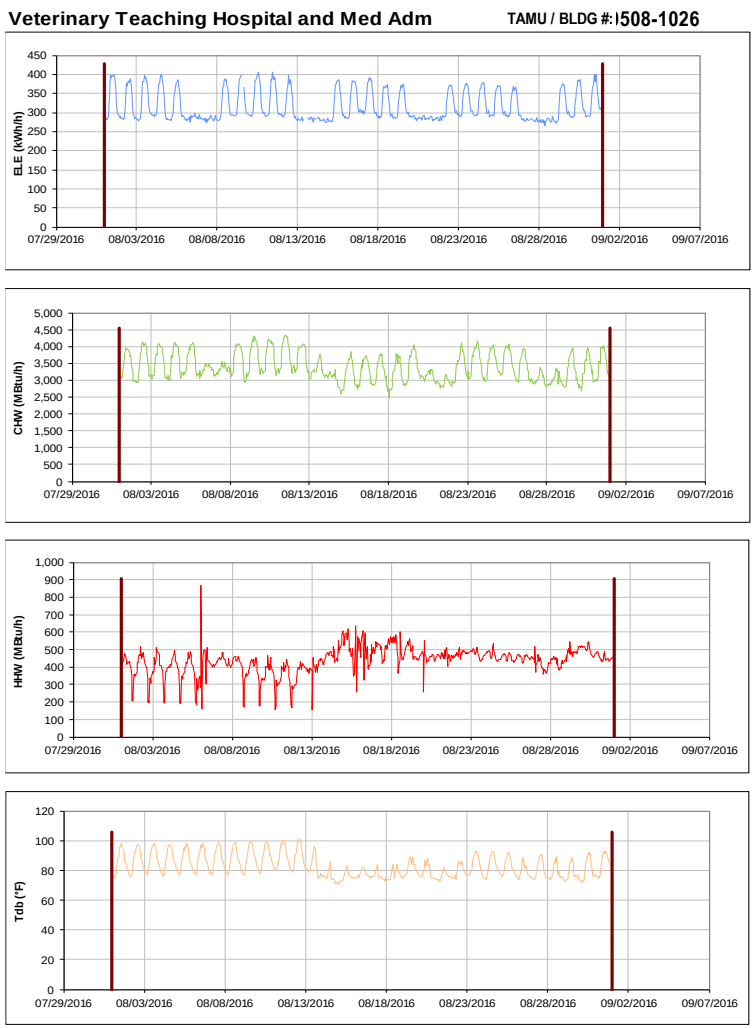


Figure III-104 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Teaching Hospital and Med Adm during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

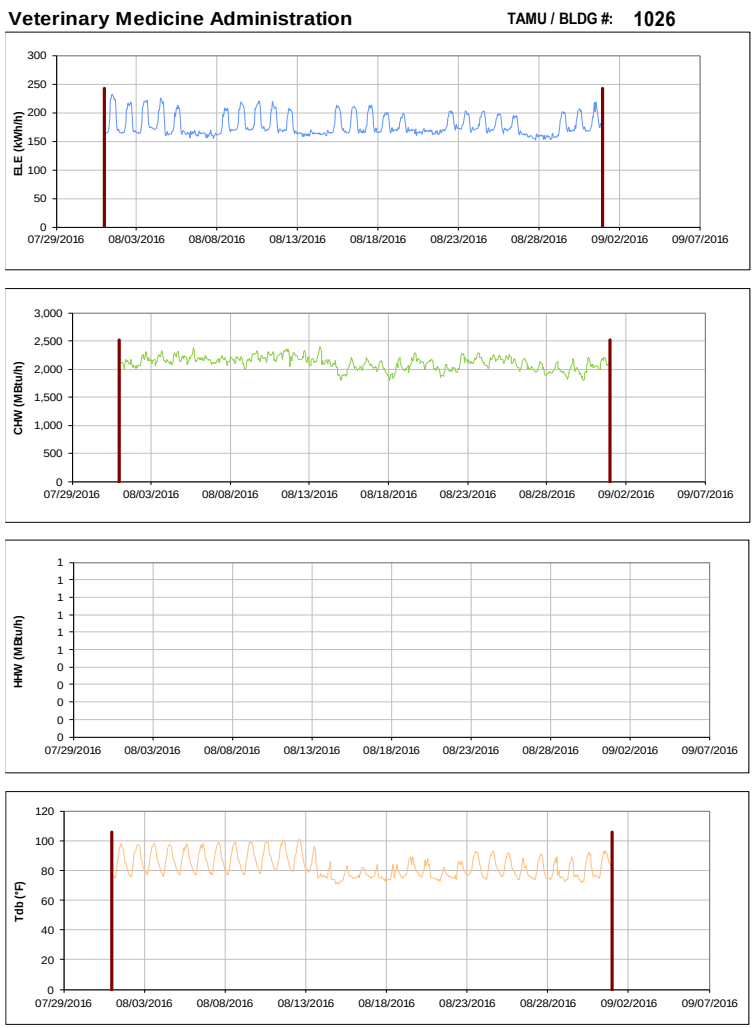


Figure III-105 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Medicine Administration during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

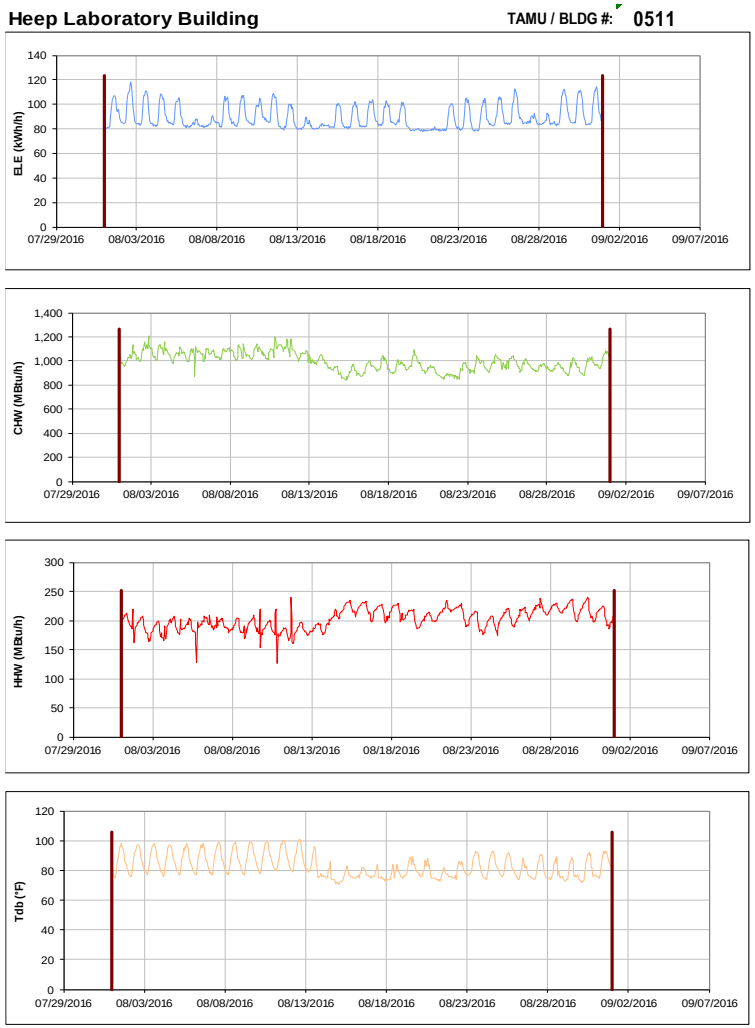


Figure III-106 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heep Laboratory Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

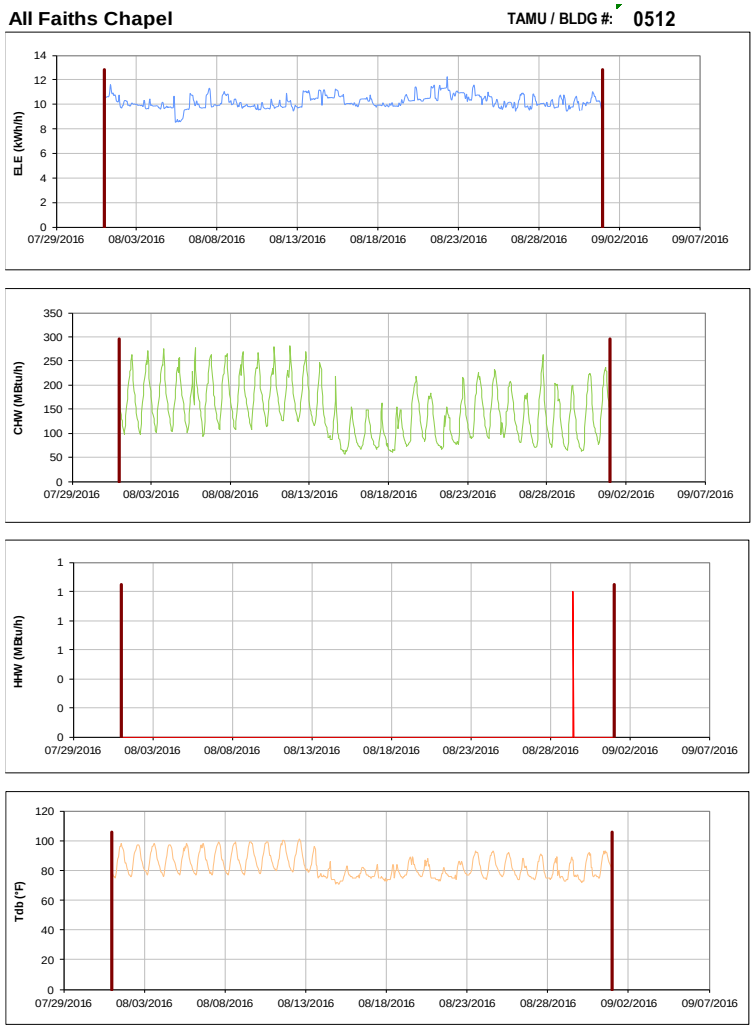


Figure III-107 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for All Faiths Chapel during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

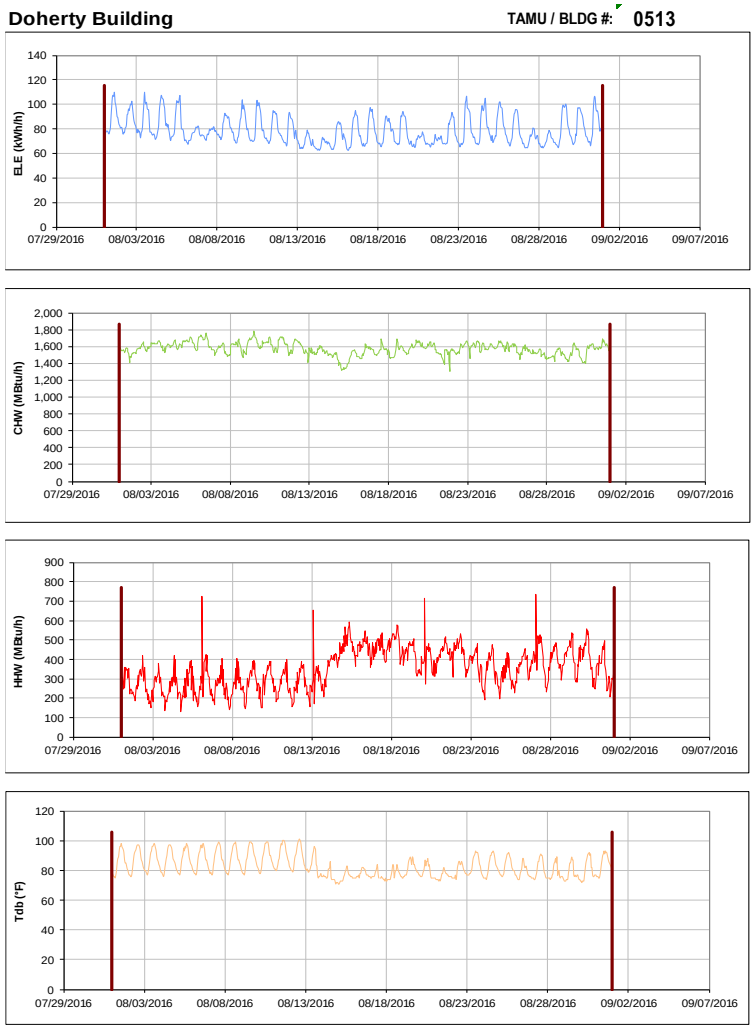


Figure III-108 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Doherty Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

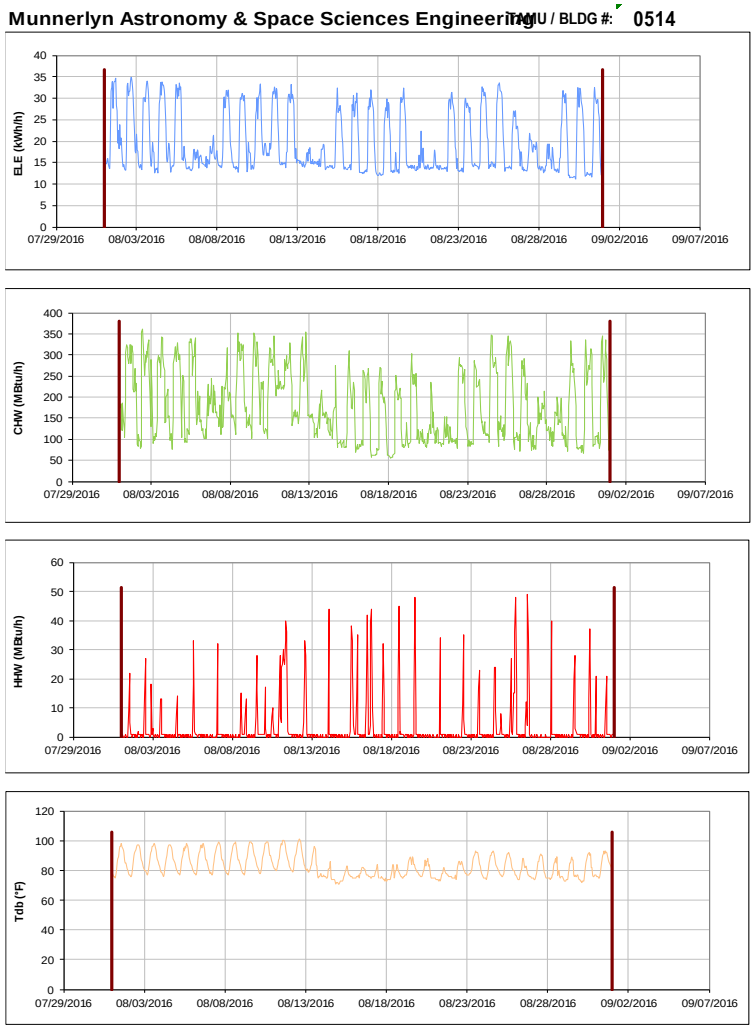


Figure III-109 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Munnerlyn Astronomy & Space Sciences Engineering during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

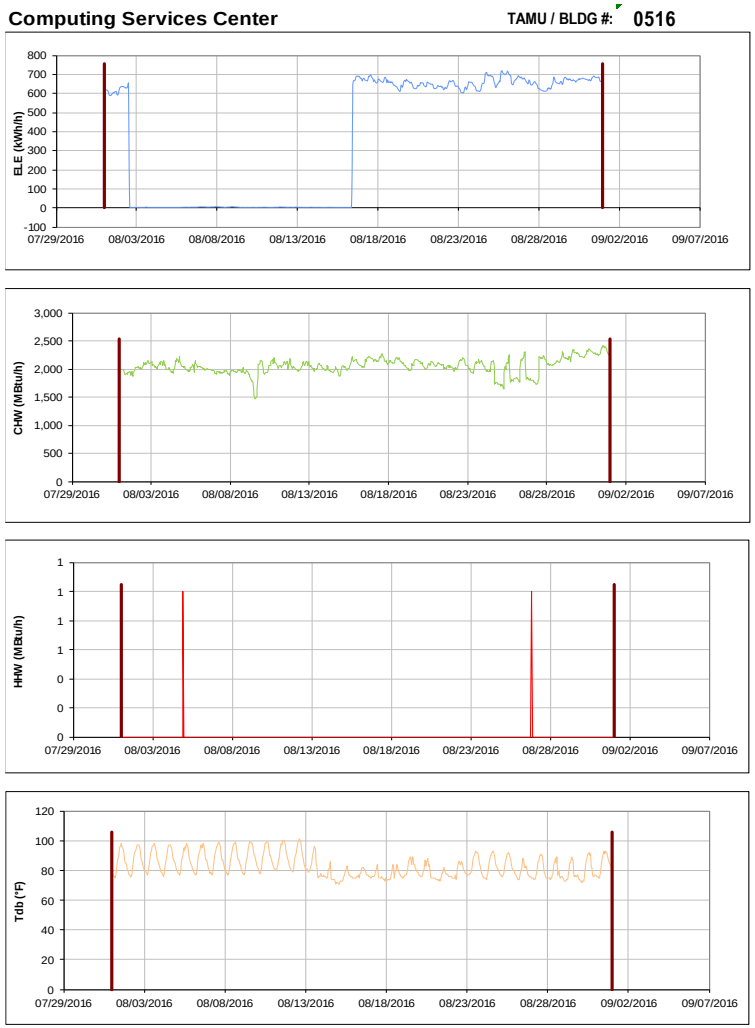


Figure III-110 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Computing Services Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

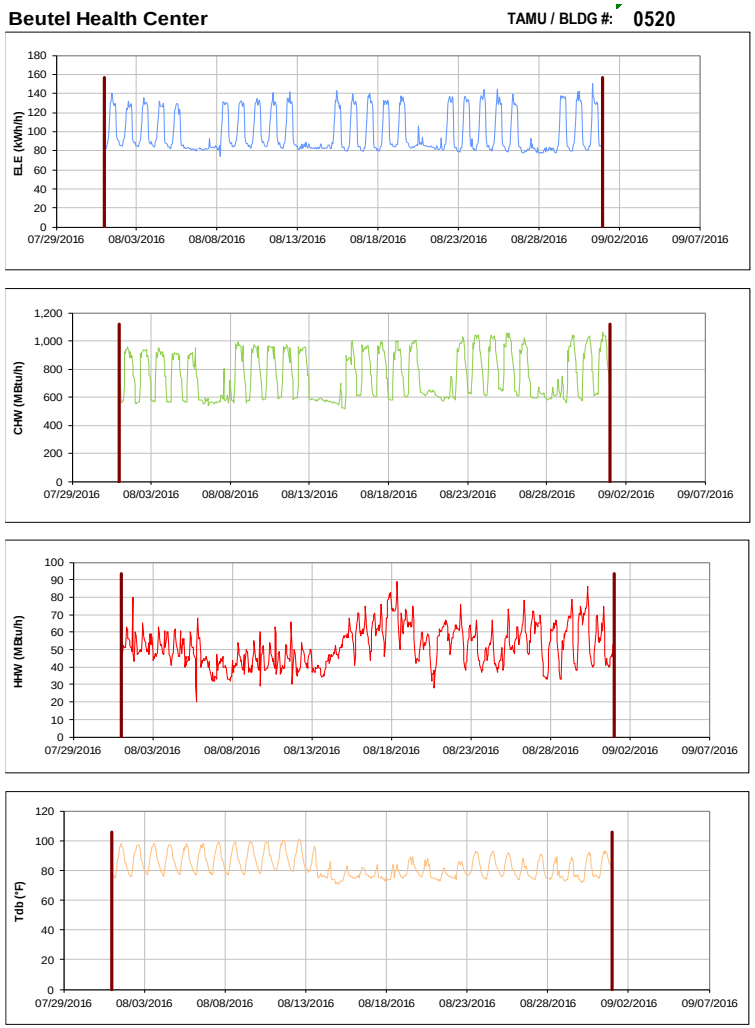


Figure III-111 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Beutel Health Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

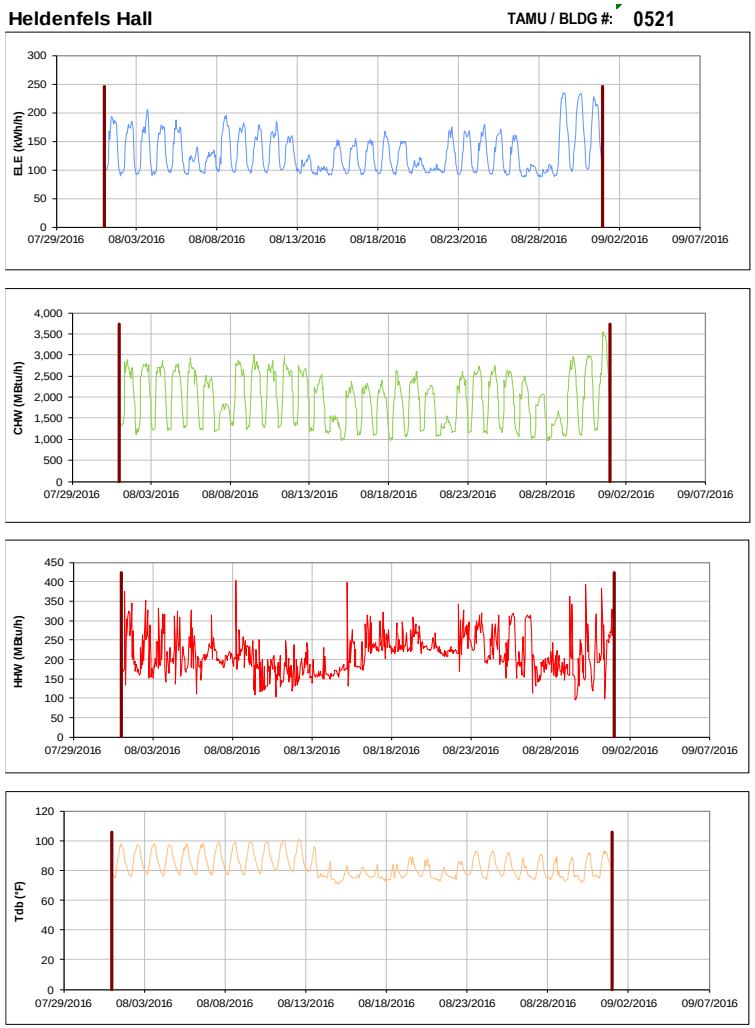


Figure III-112 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heldenfels Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

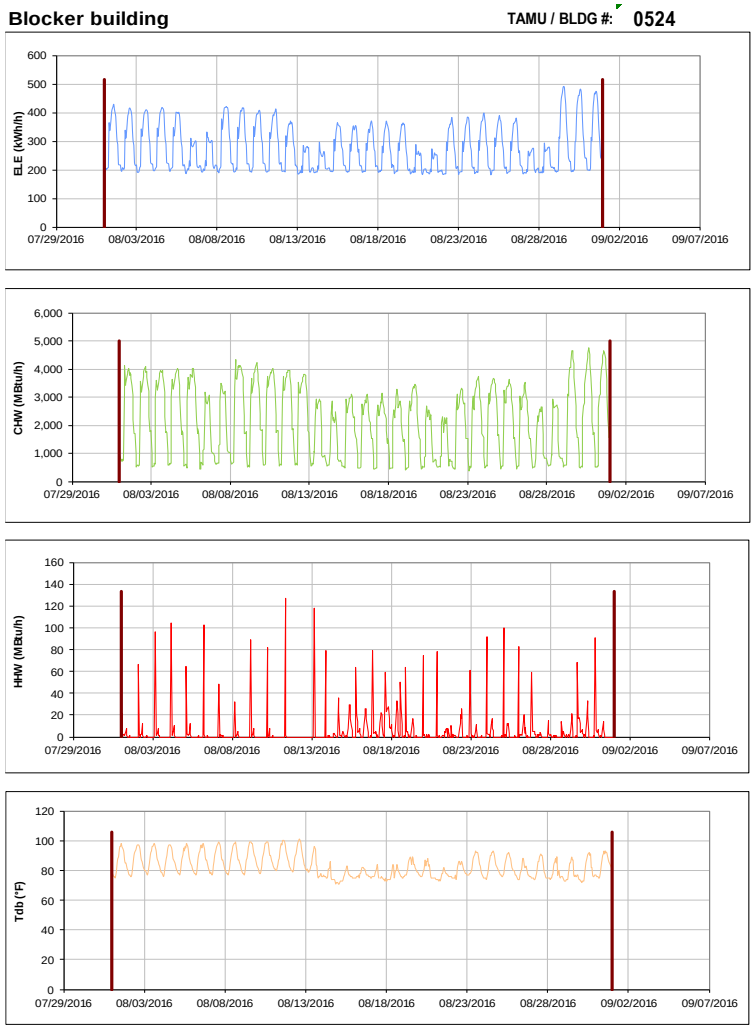


Figure III-113 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Blocker building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

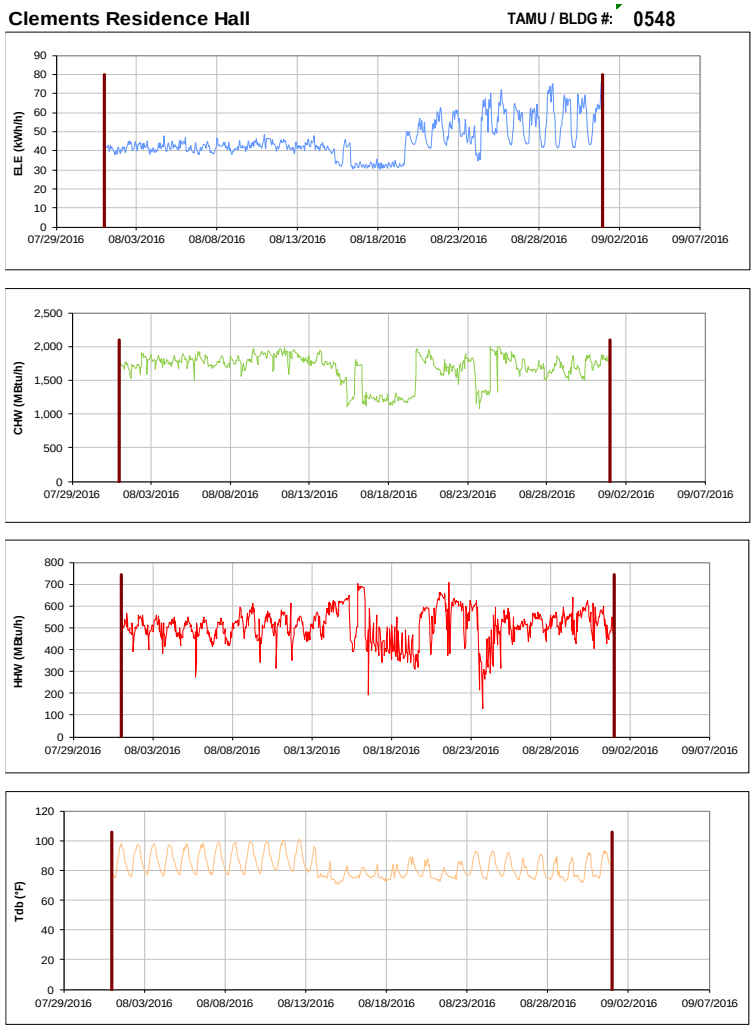


Figure III-114 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Clements Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

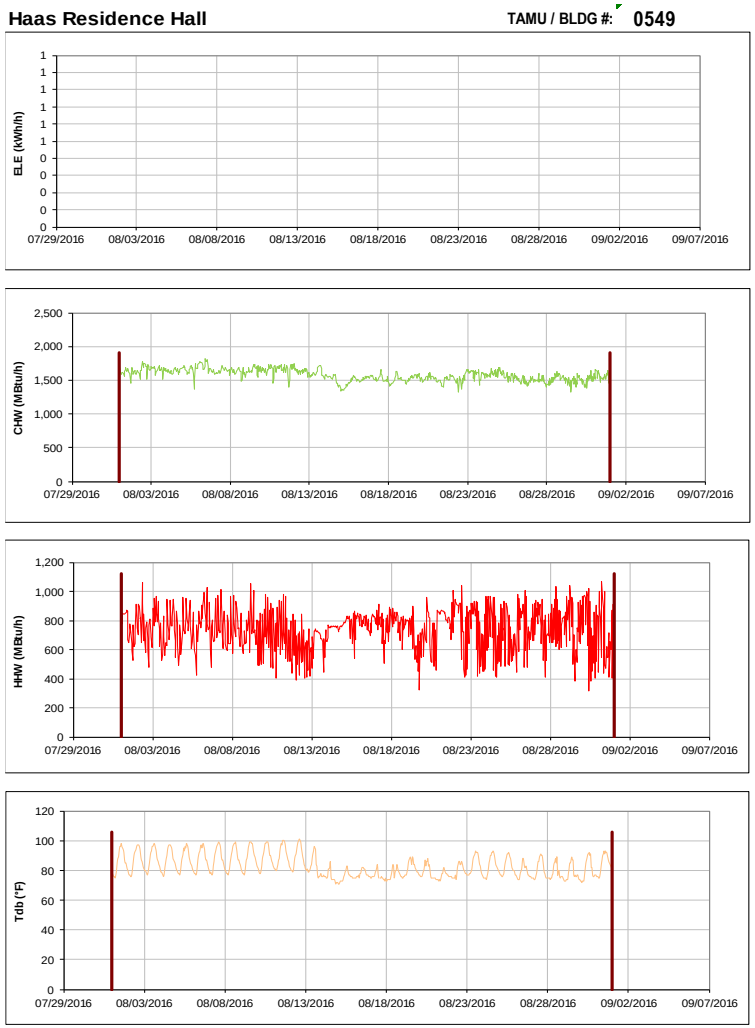


Figure III-115 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Haas Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

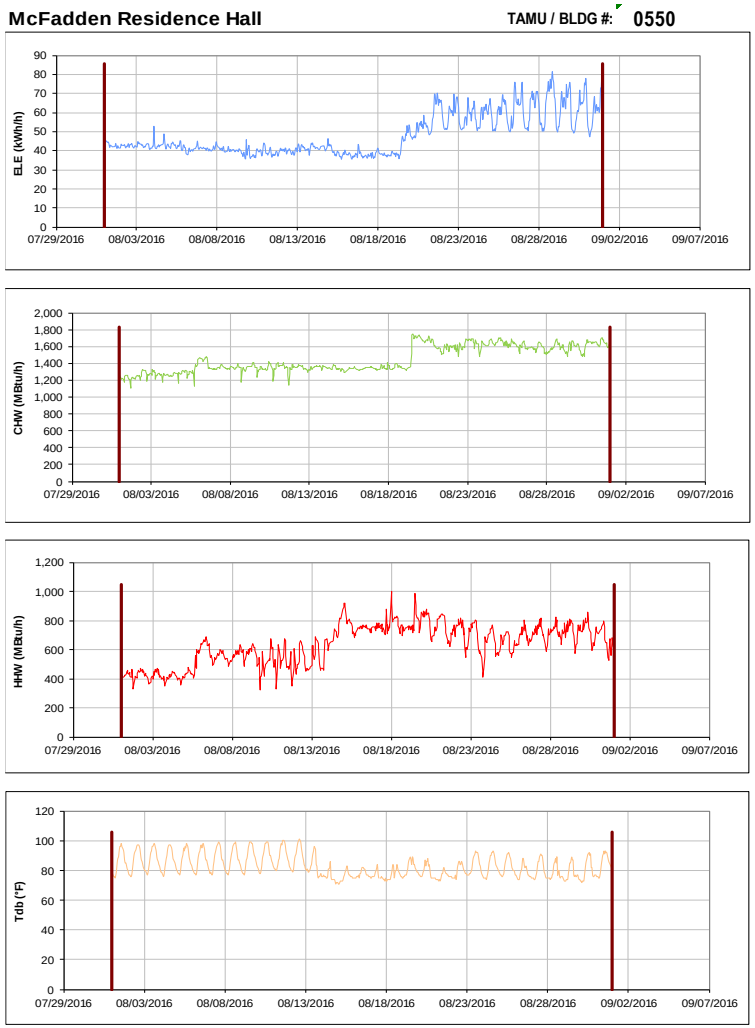


Figure III-116 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for McFadden Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

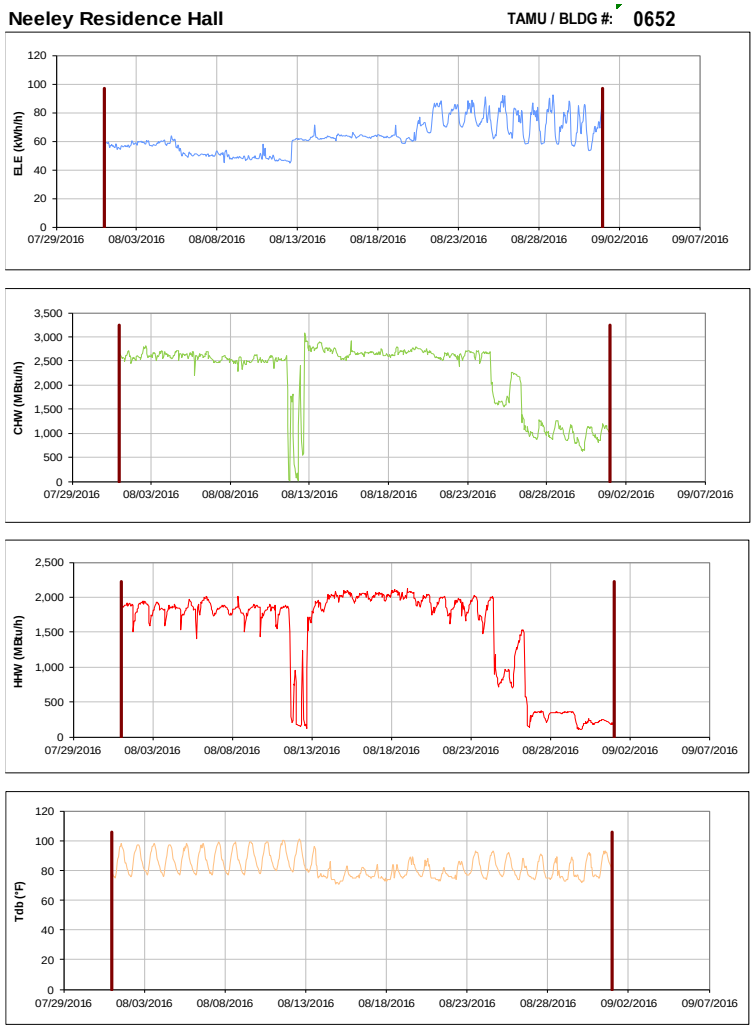


Figure III-117 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Neeley Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

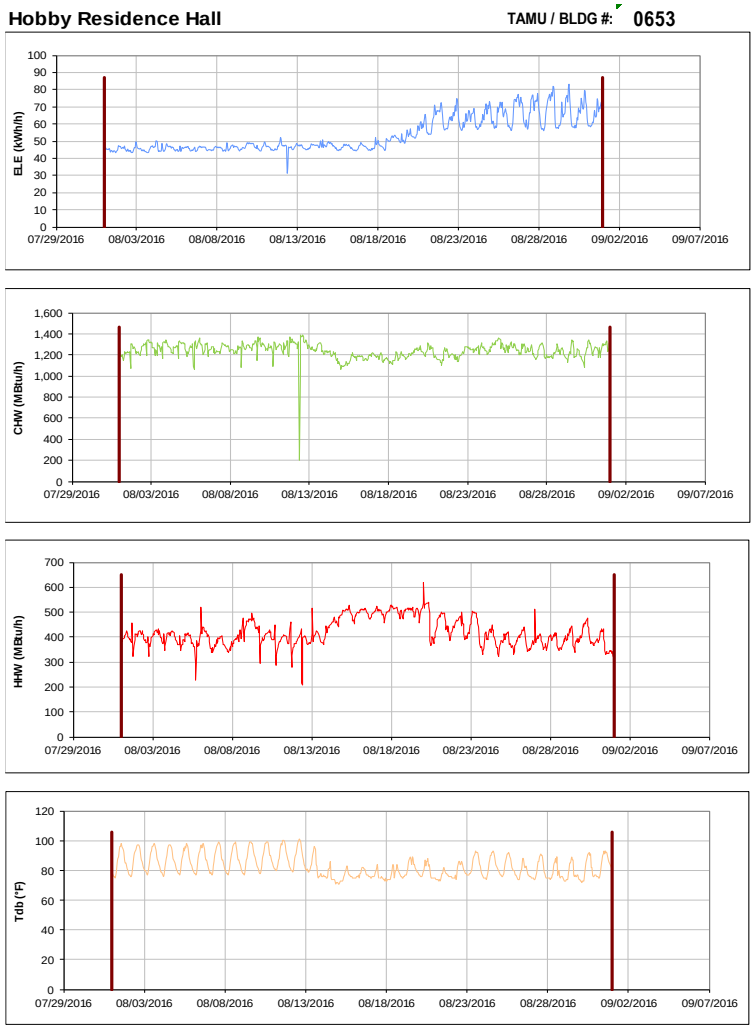


Figure III-118 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hobby Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

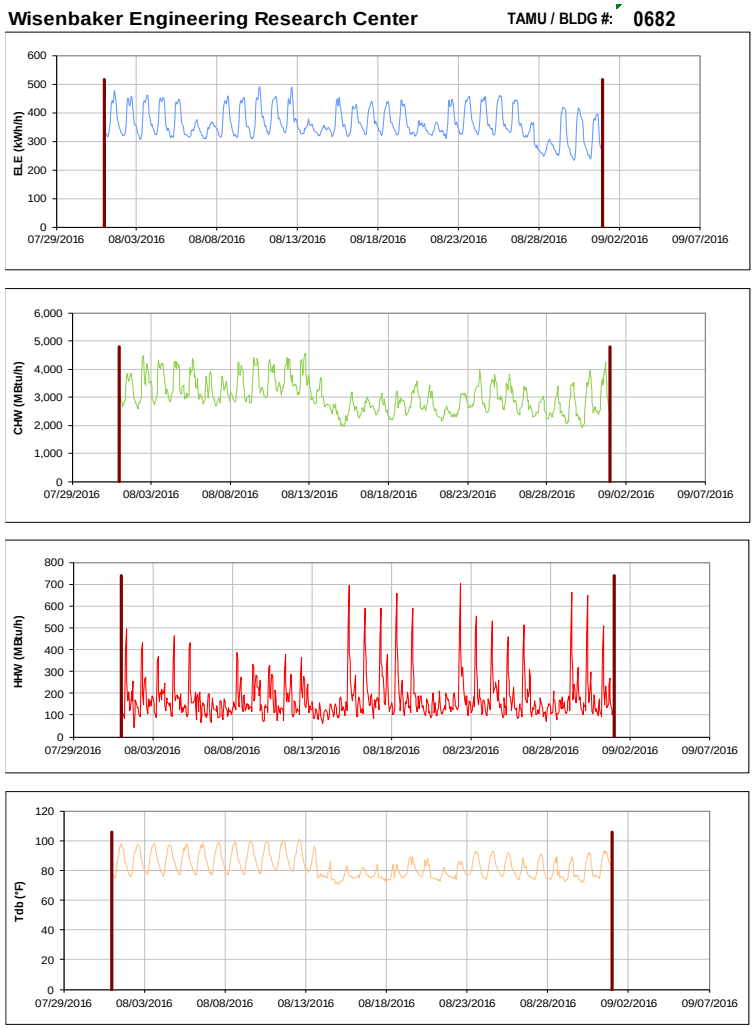


Figure III-119 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wisenbaker Engineering Research Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

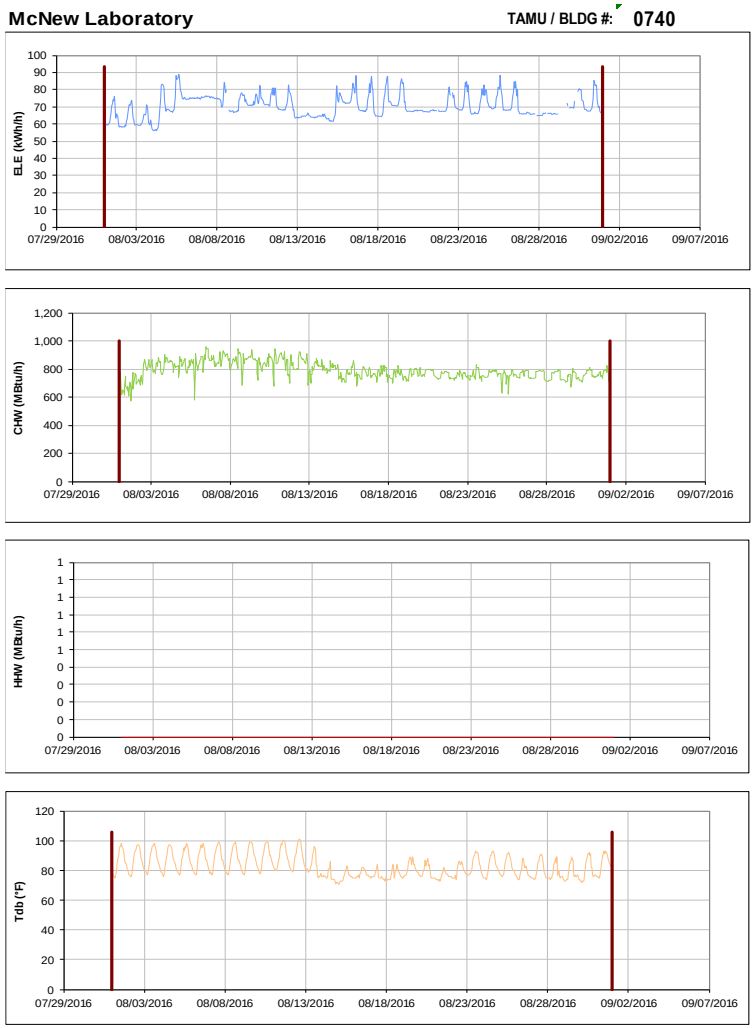


Figure III-120 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for McNew Laboratory during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

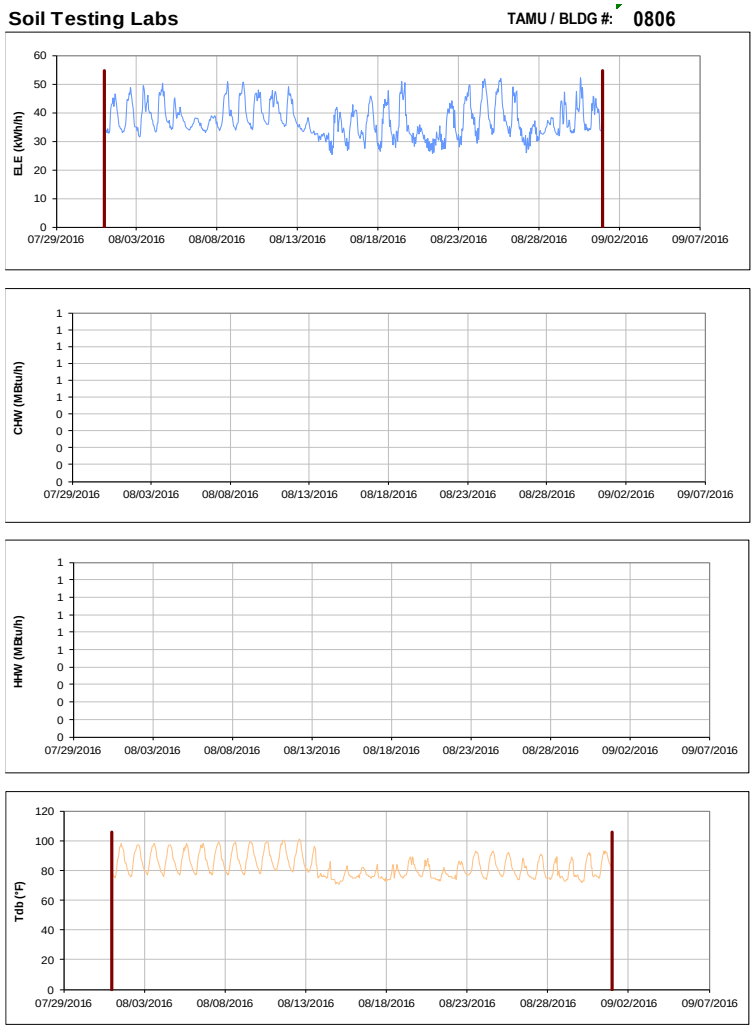


Figure III-121 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Soil Testing Labs during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

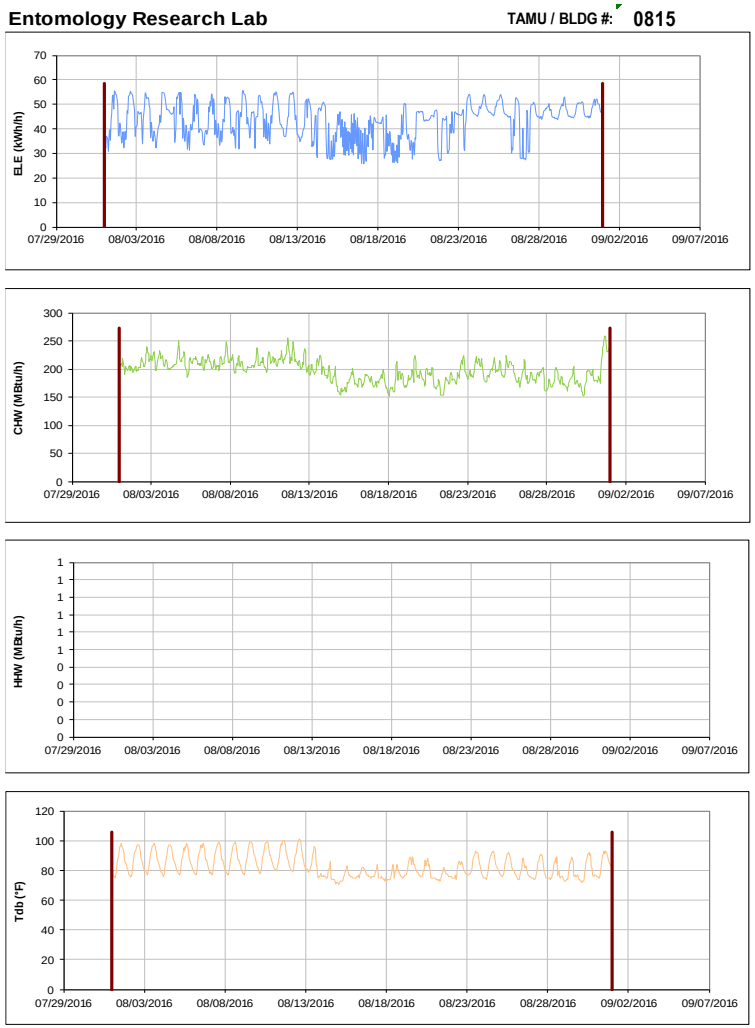


Figure III-122 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Entomology Research Lab during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

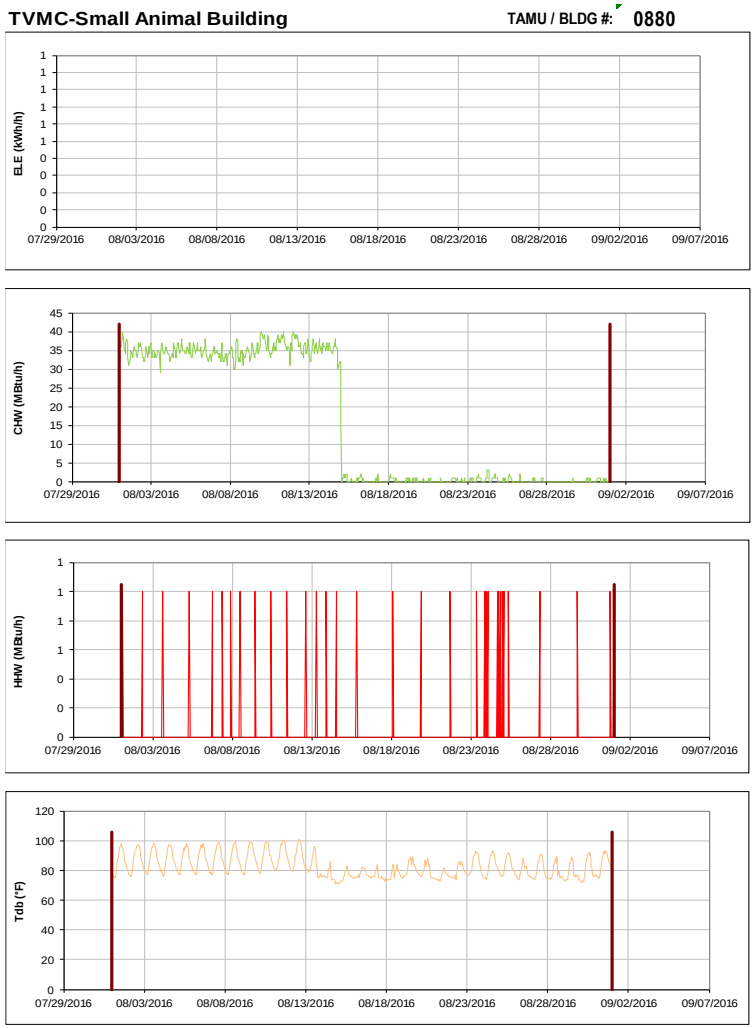


Figure III-123 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TVMC-Small Animal Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

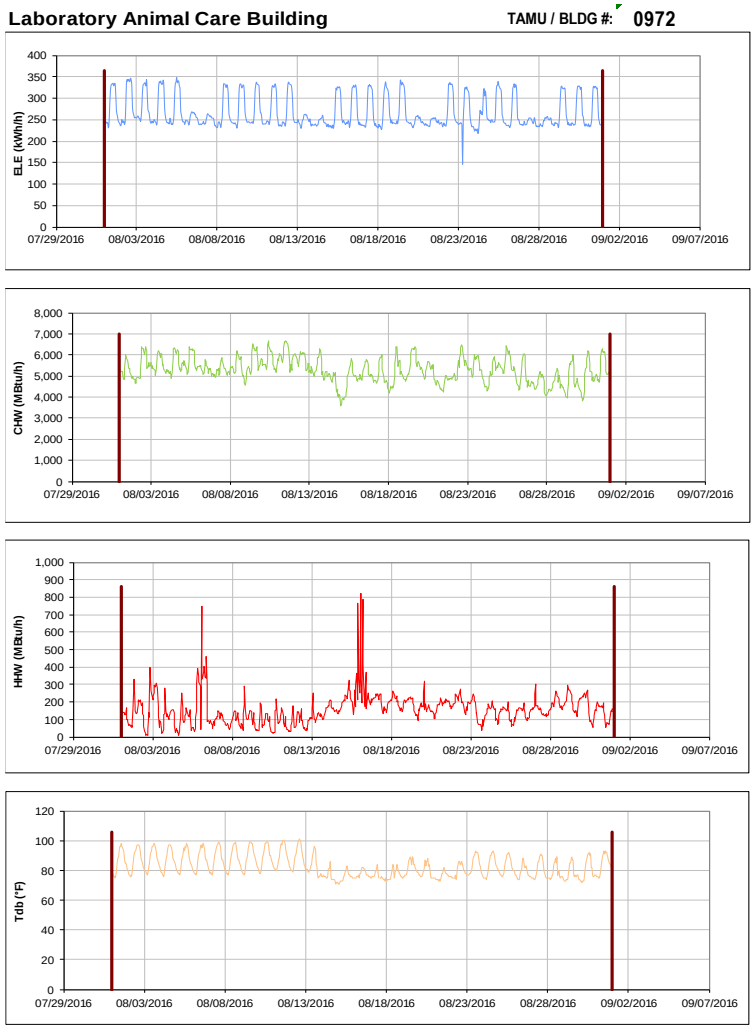


Figure III-124 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Laboratory Animal Care Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

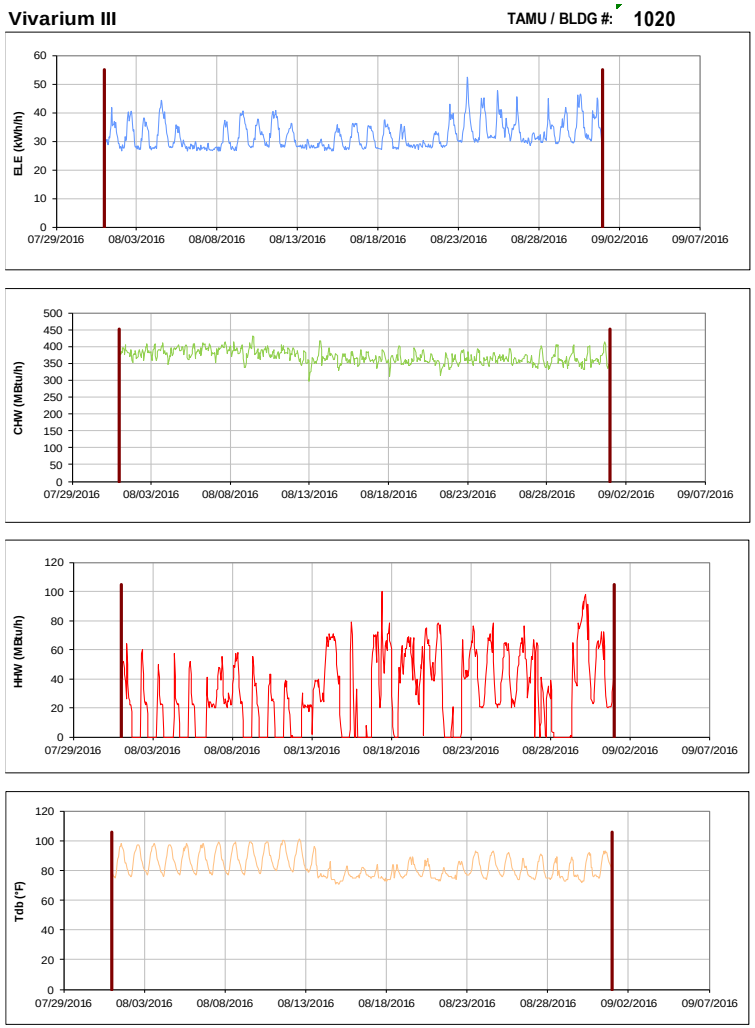


Figure III-125 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Vivarium III during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

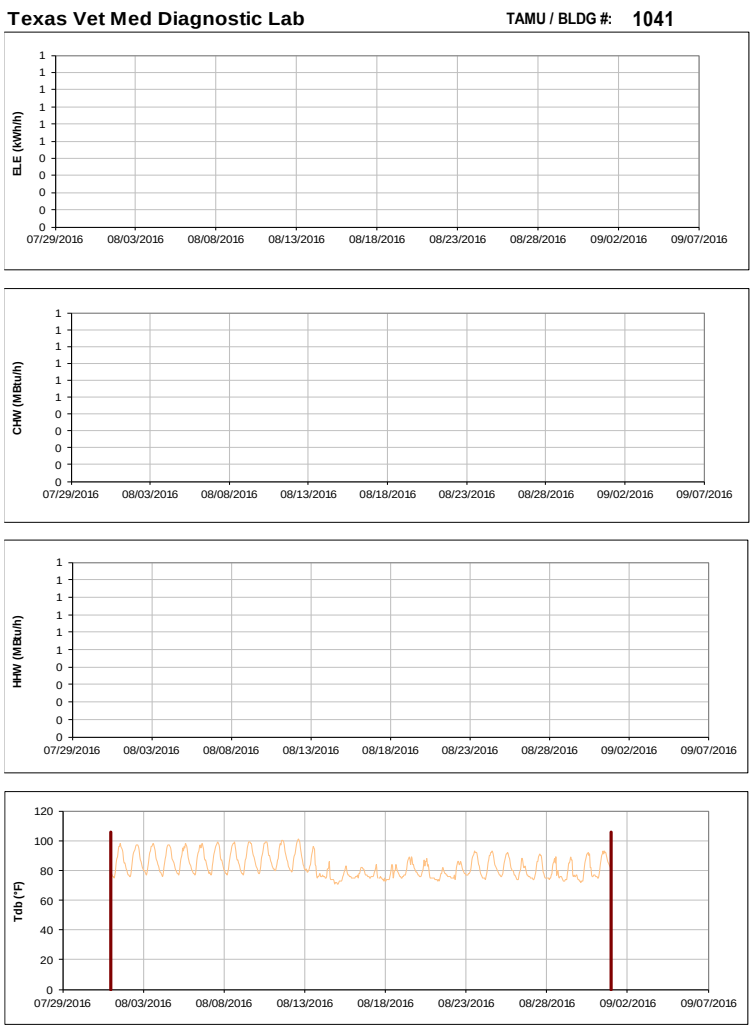


Figure III-126 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas Vet Med Diagnostic Lab during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

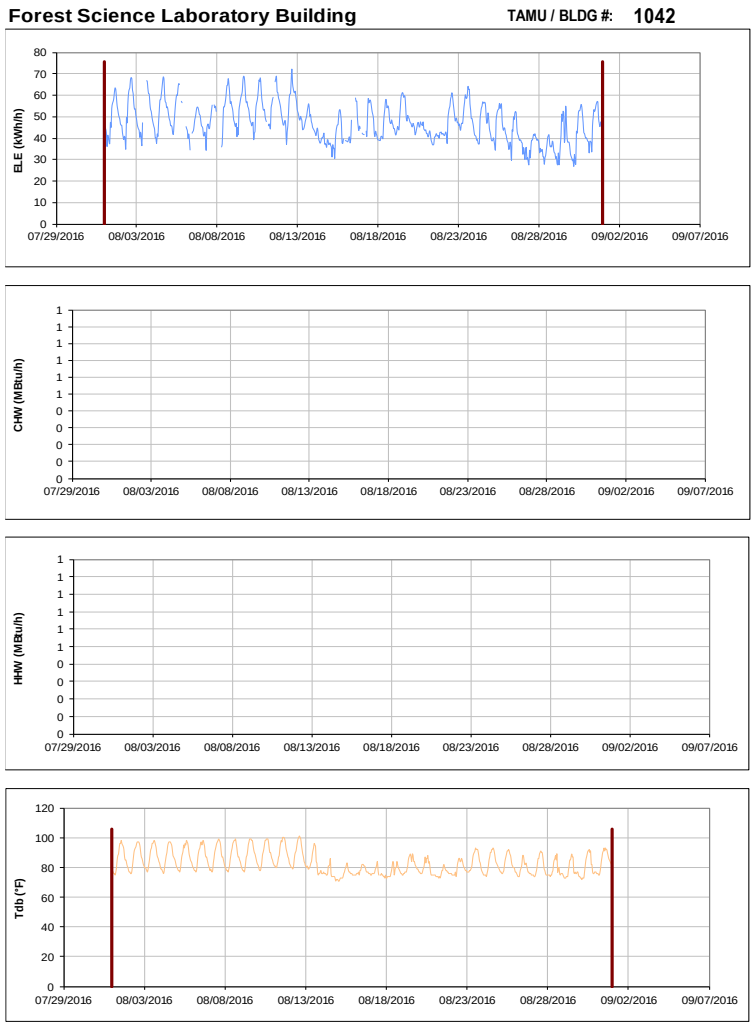


Figure III-127 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Forest Science Laboratory Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

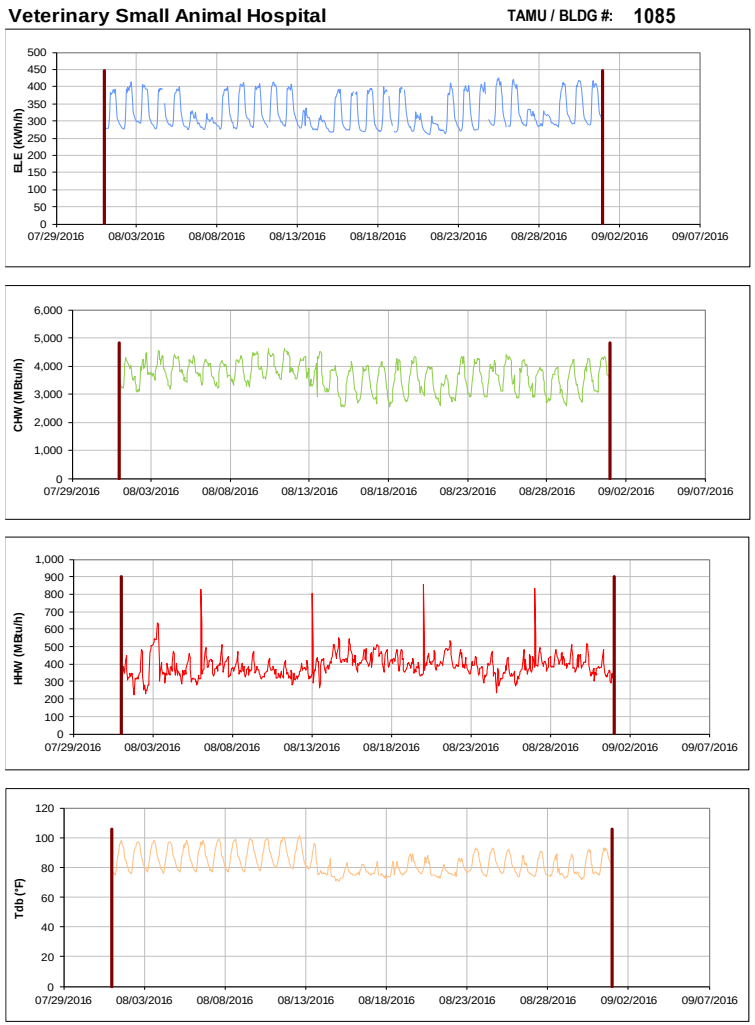


Figure III-128 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Small Animal Hospital during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

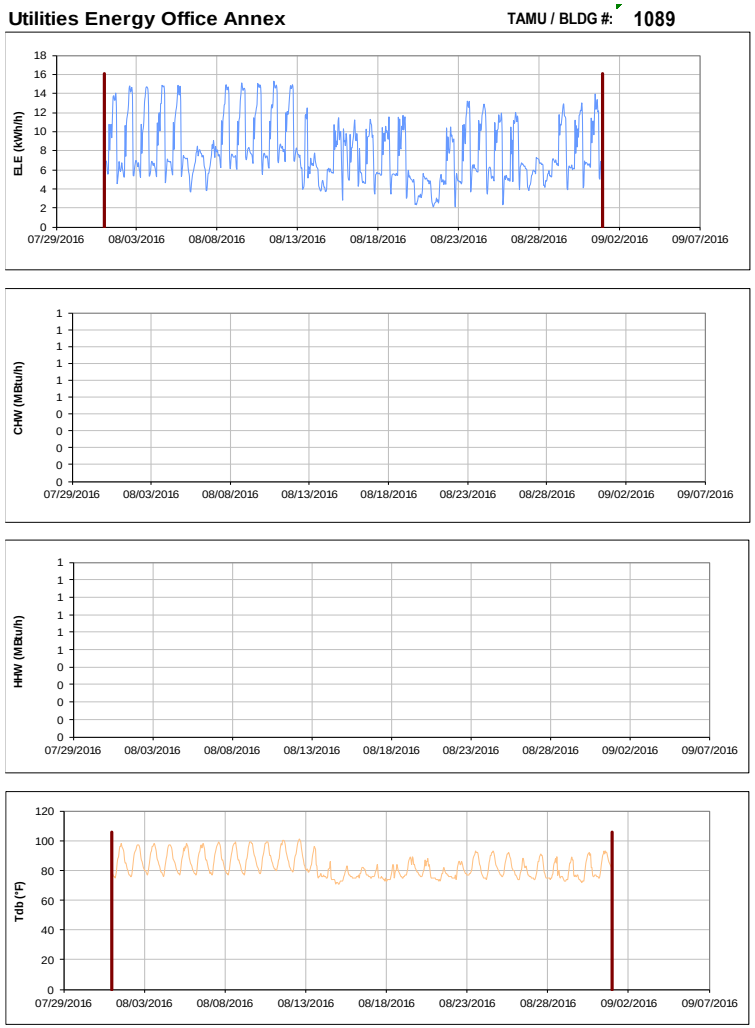


Figure III-129 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities Energy Office Annex during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

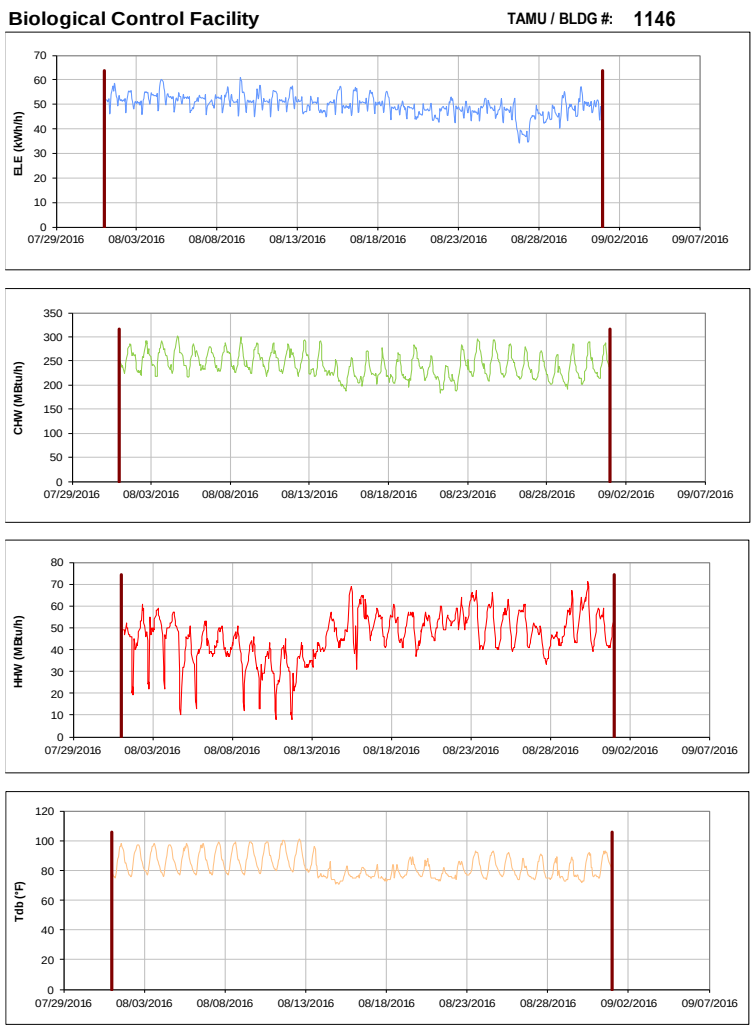


Figure III-130 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Control Facility during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

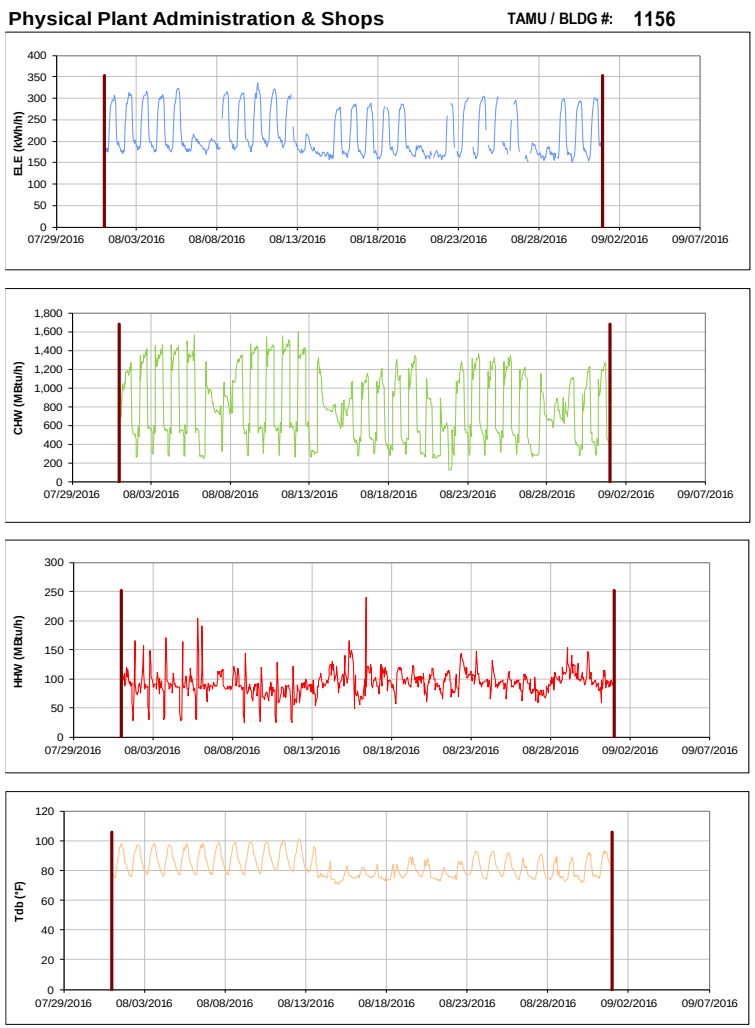


Figure III-131 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Physical Plant Administration & Shops during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

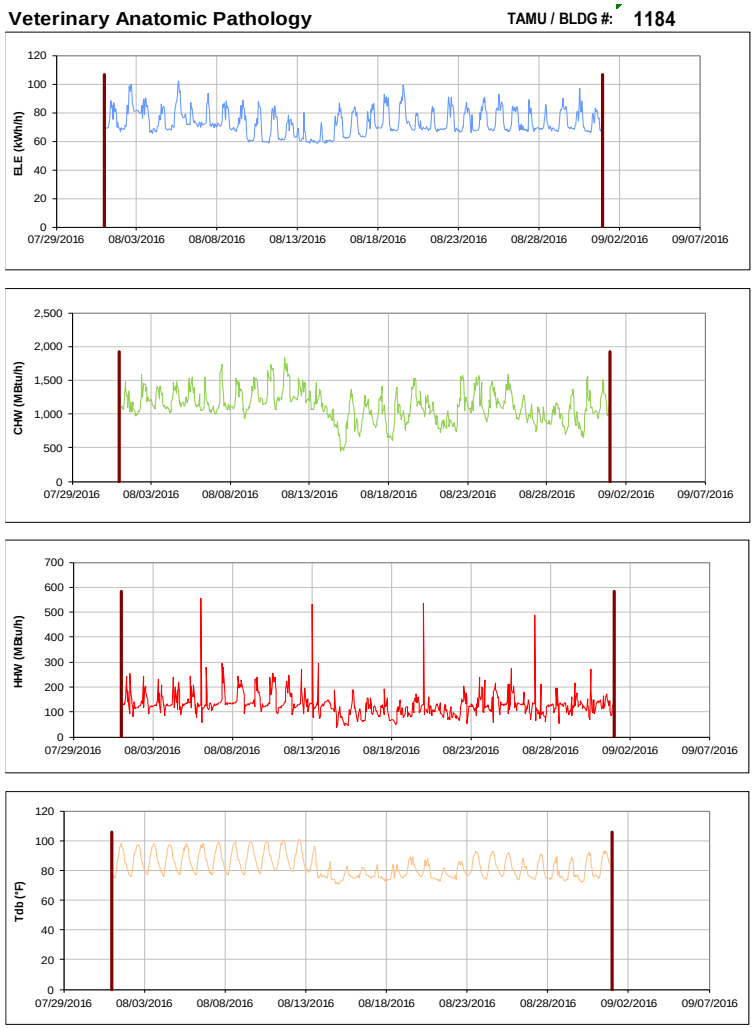


Figure III-132 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Anatomic Pathology during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

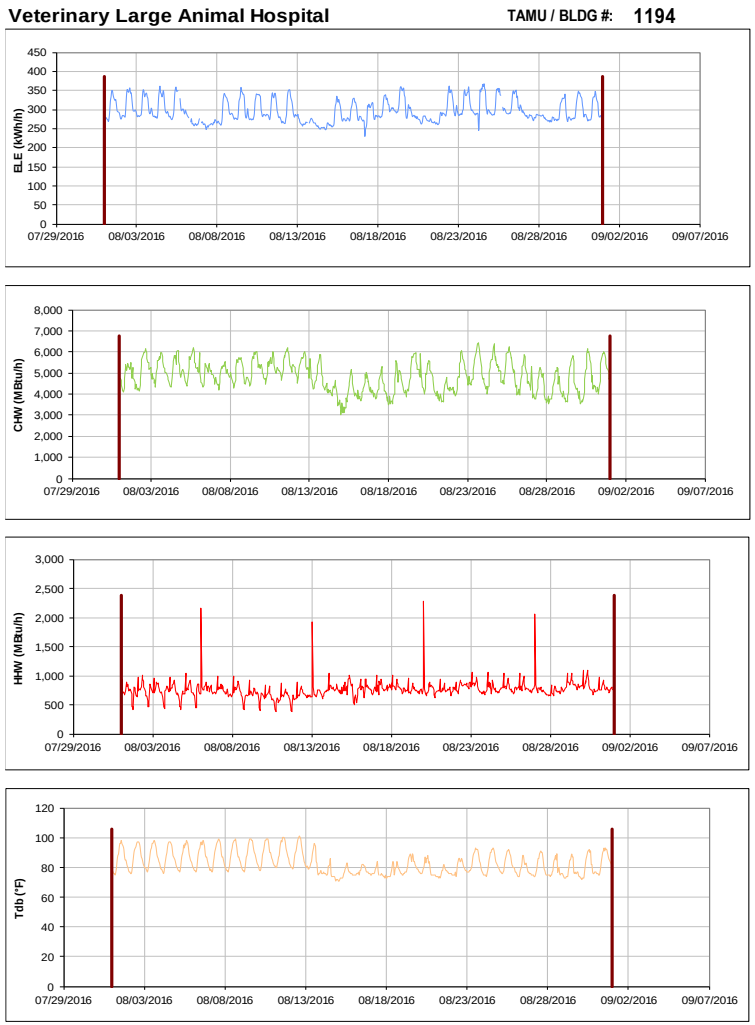


Figure III-133 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Large Animal Hospital during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

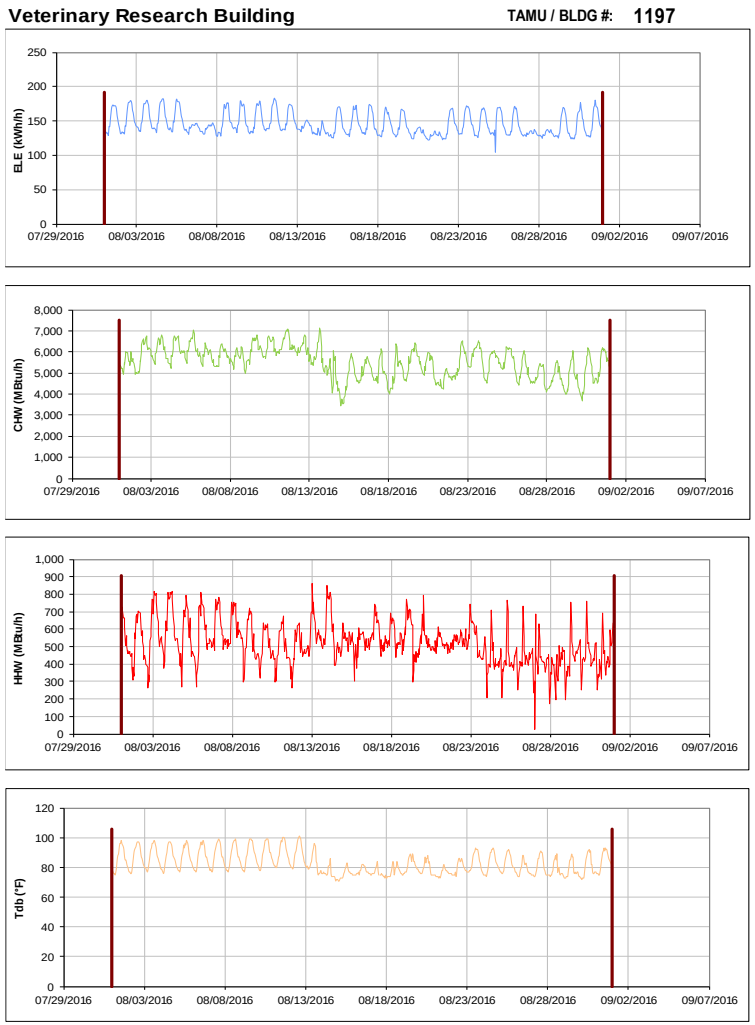


Figure III-134 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Research Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

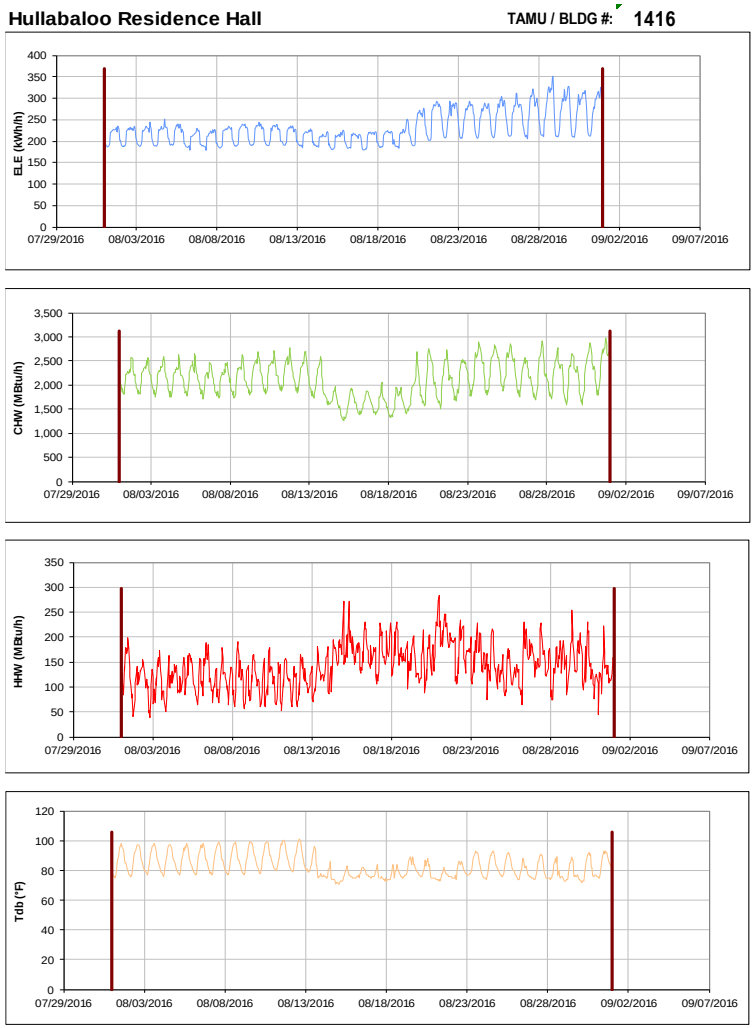


Figure III-135 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hullabaloo Residence Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

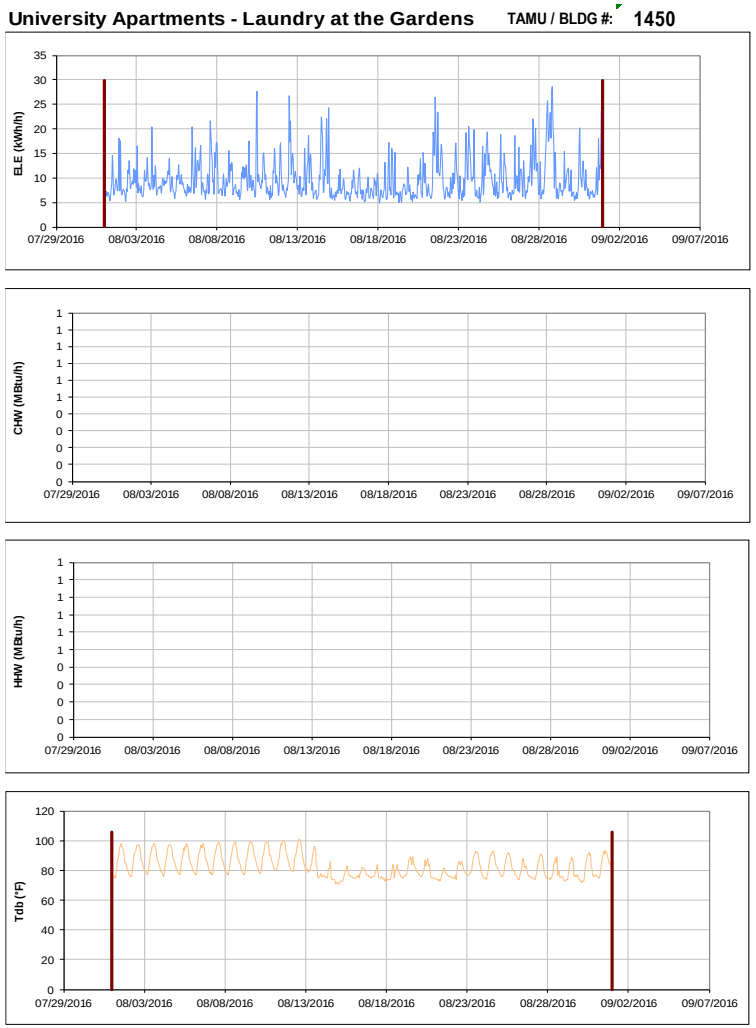


Figure III-136 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - Laundry at the Gardens during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

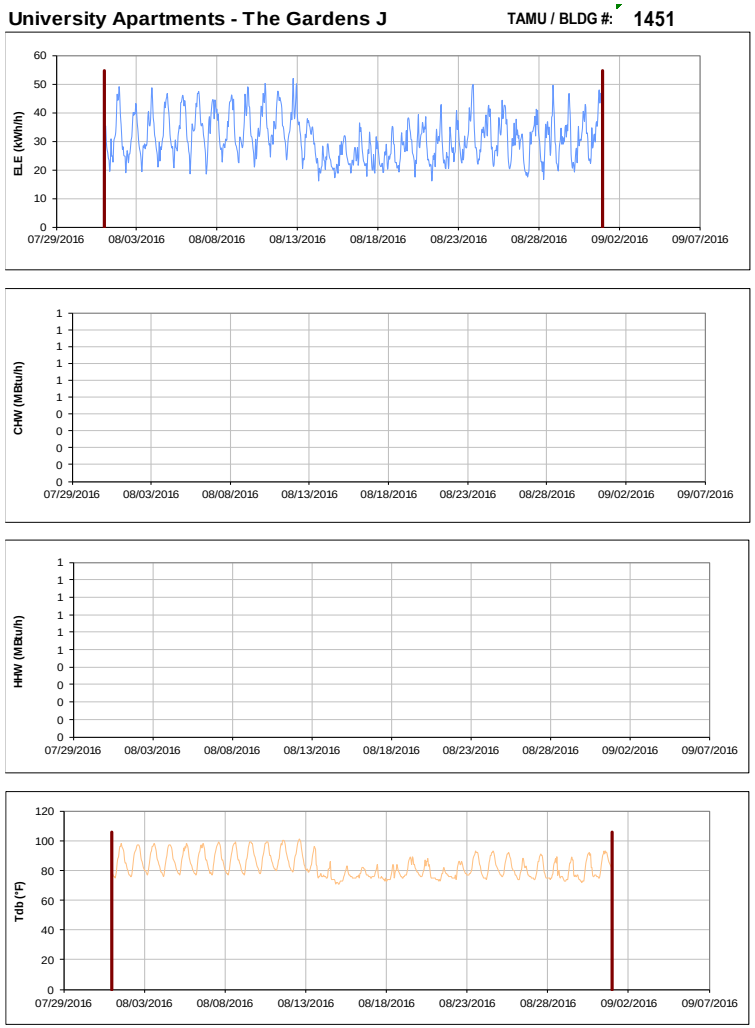


Figure III-137 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens J during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

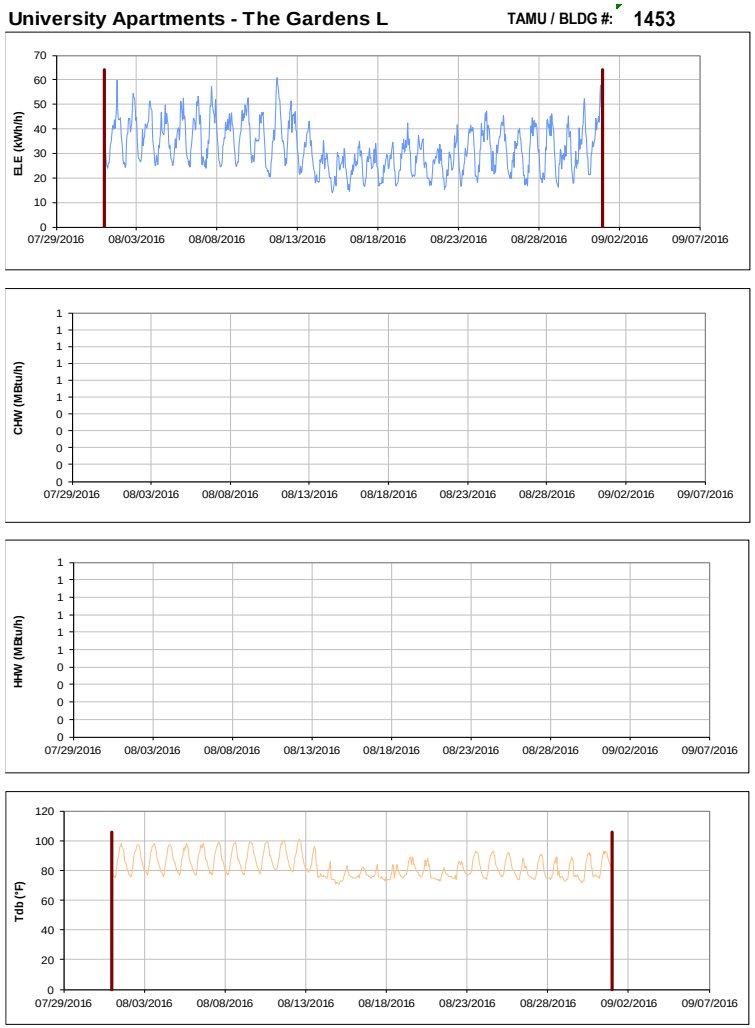


Figure III-138 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens L during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

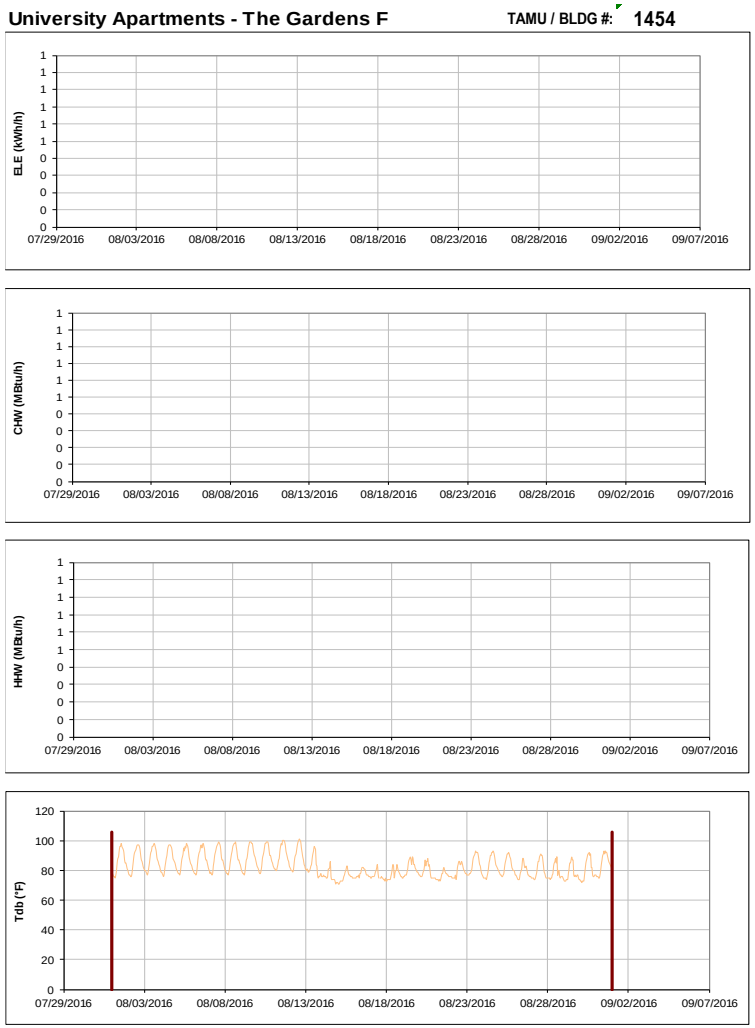


Figure III-139 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens F during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

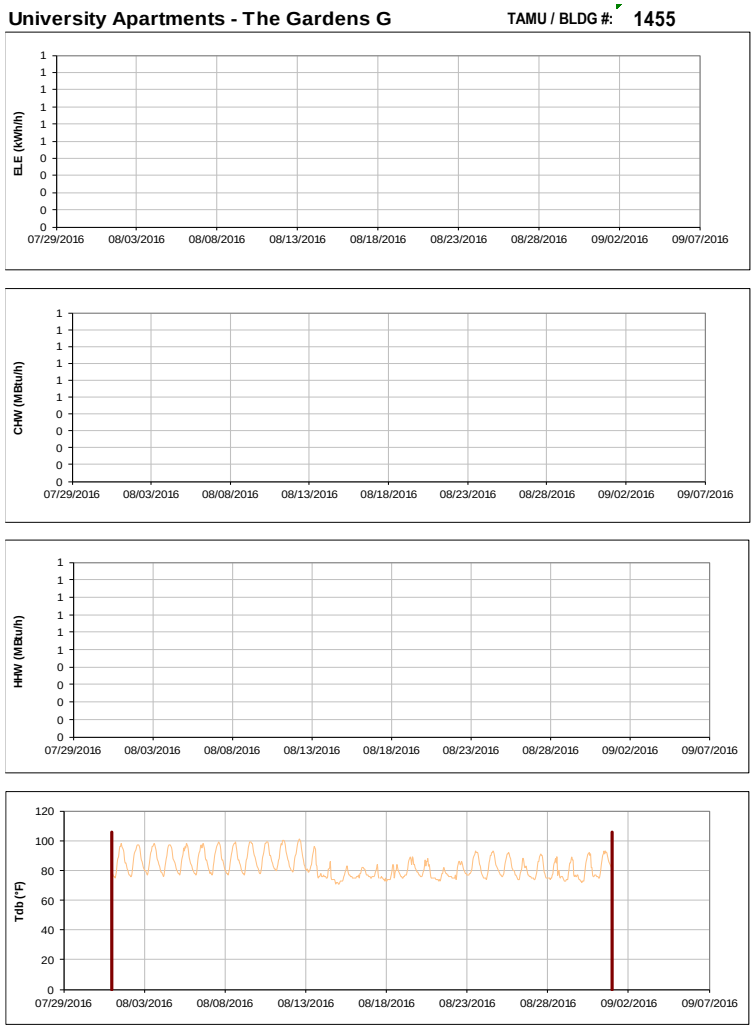


Figure III-140 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens G during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

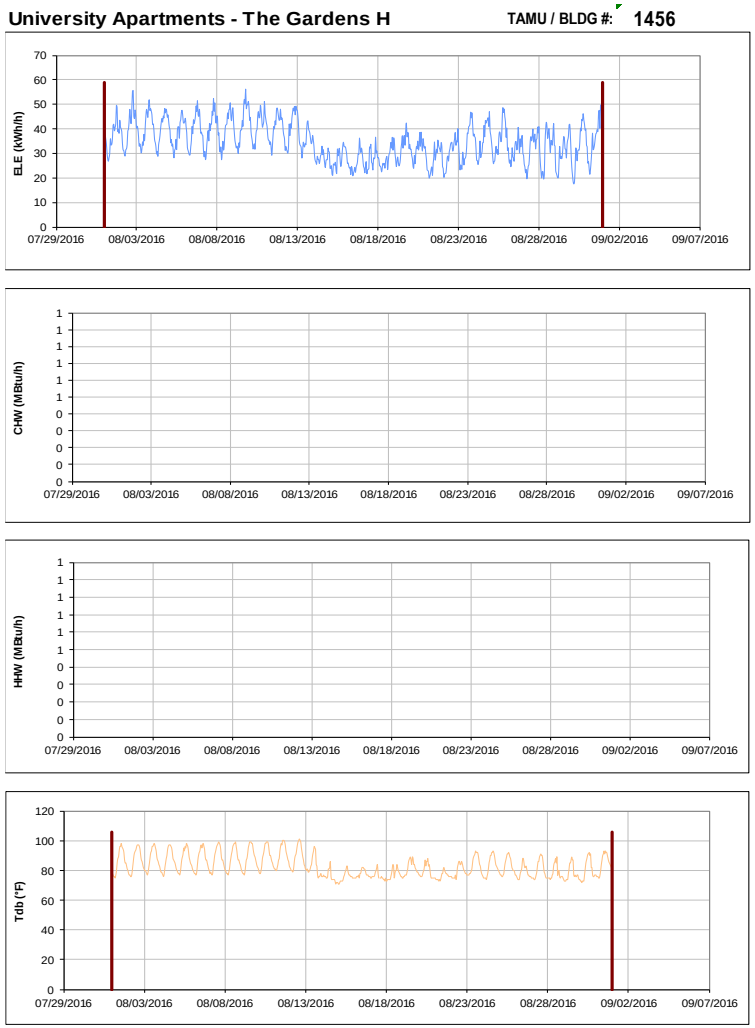


Figure III-141 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens H during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

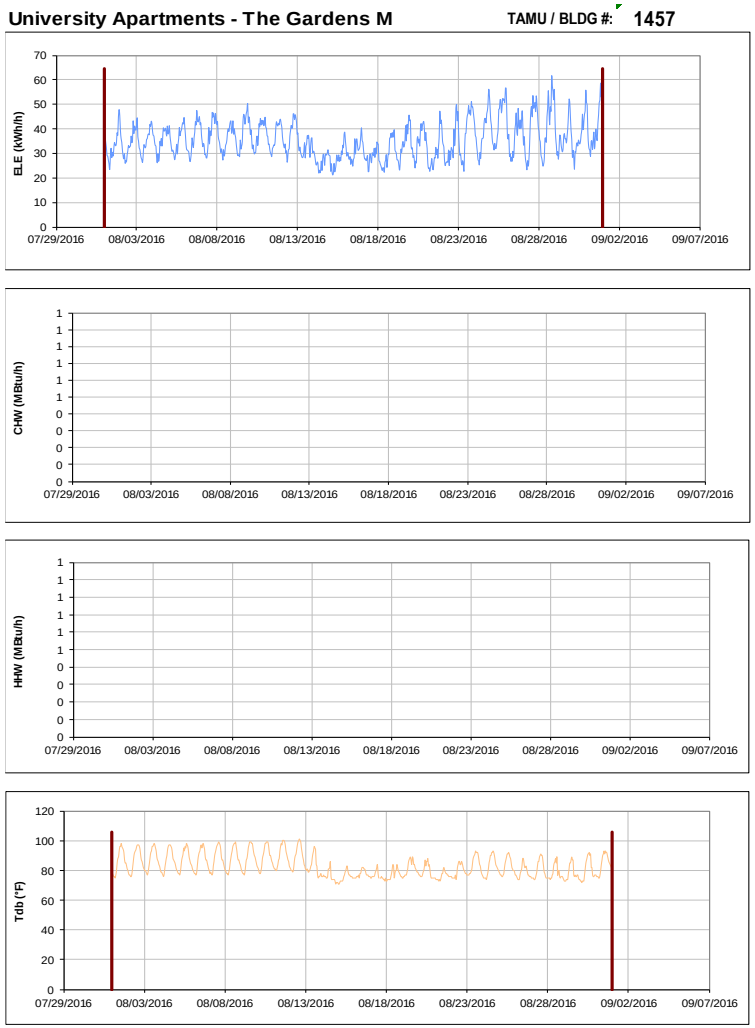


Figure III-142 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens M during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

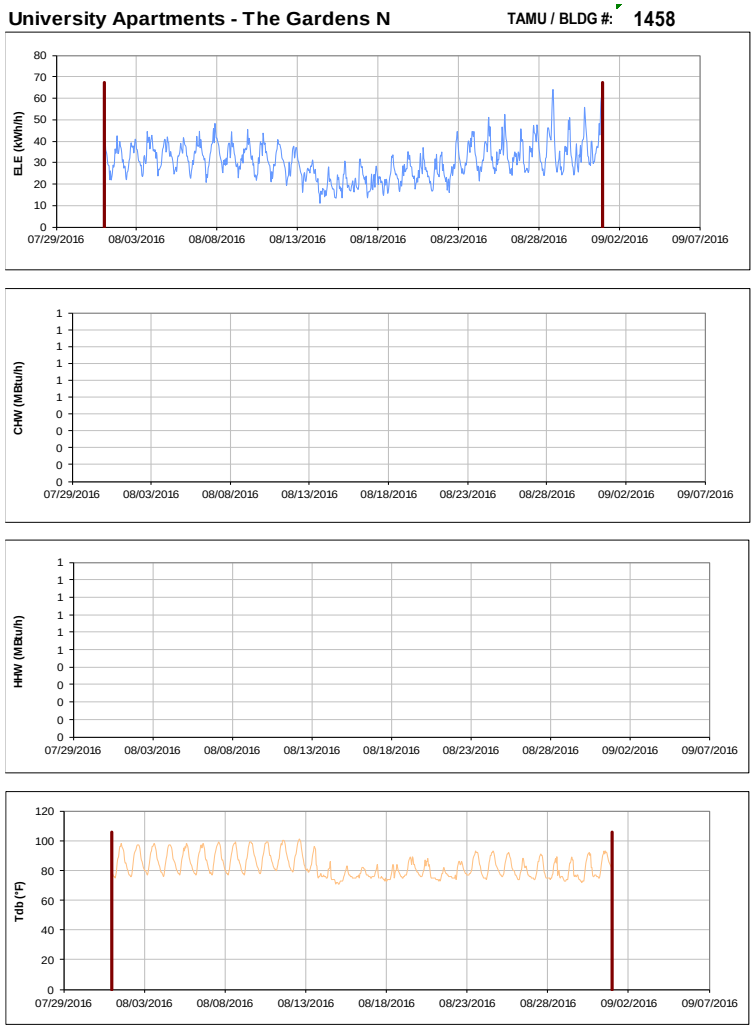


Figure III-143 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens N during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

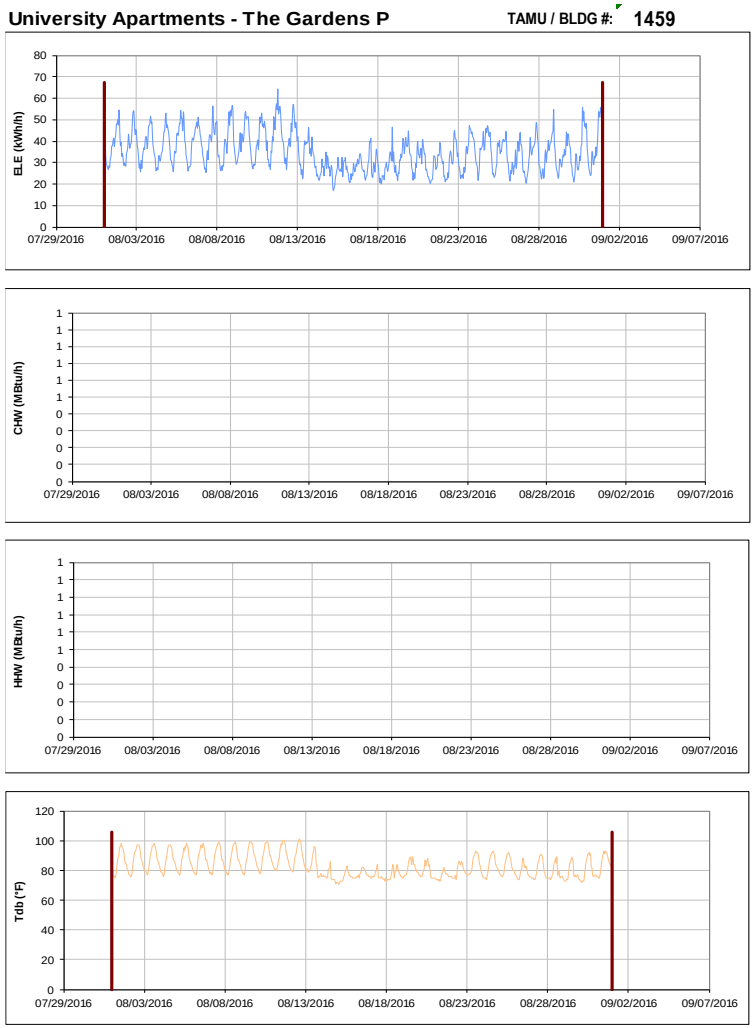


Figure III-144 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens P during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

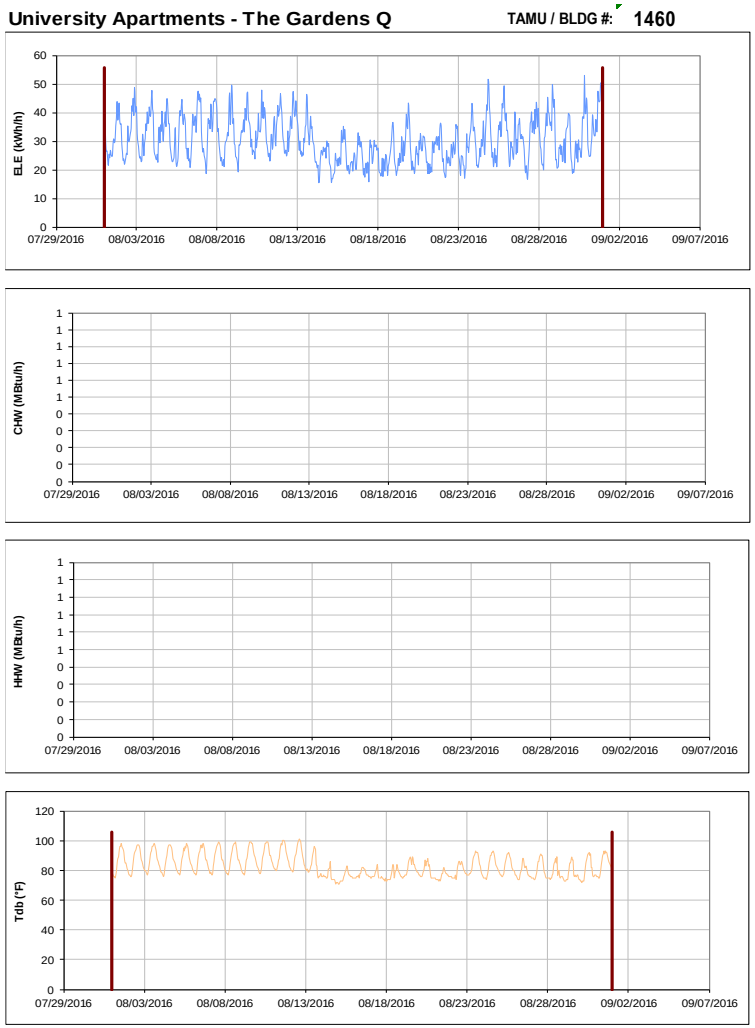


Figure III-145 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens Q during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

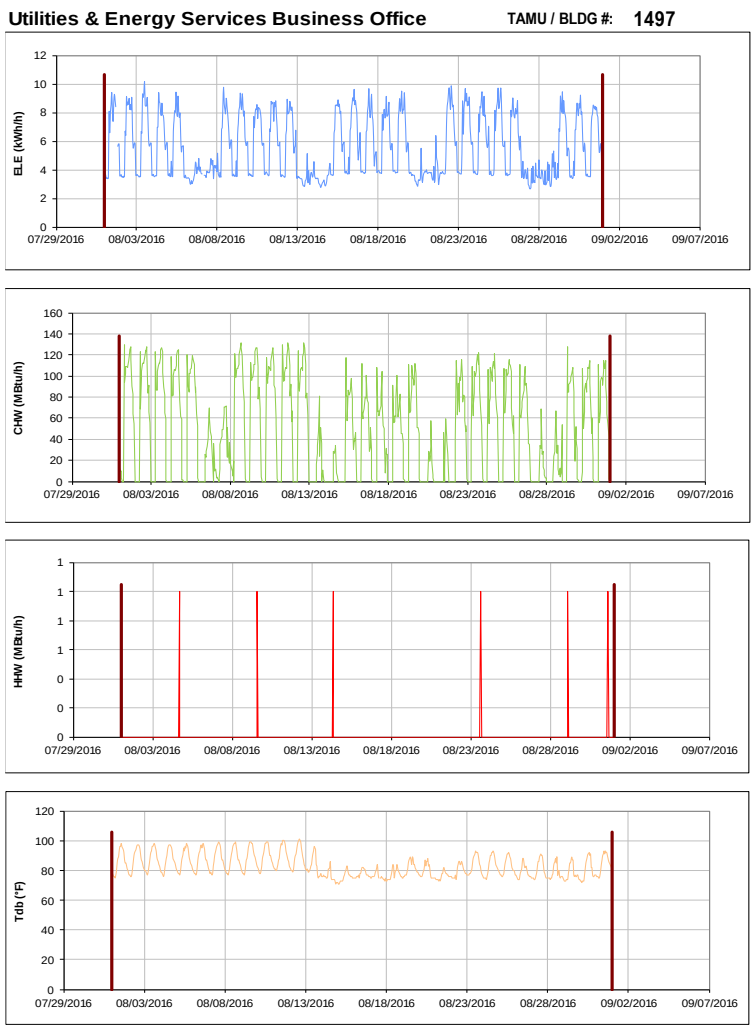


Figure III-146 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities & Energy Services Business Office during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

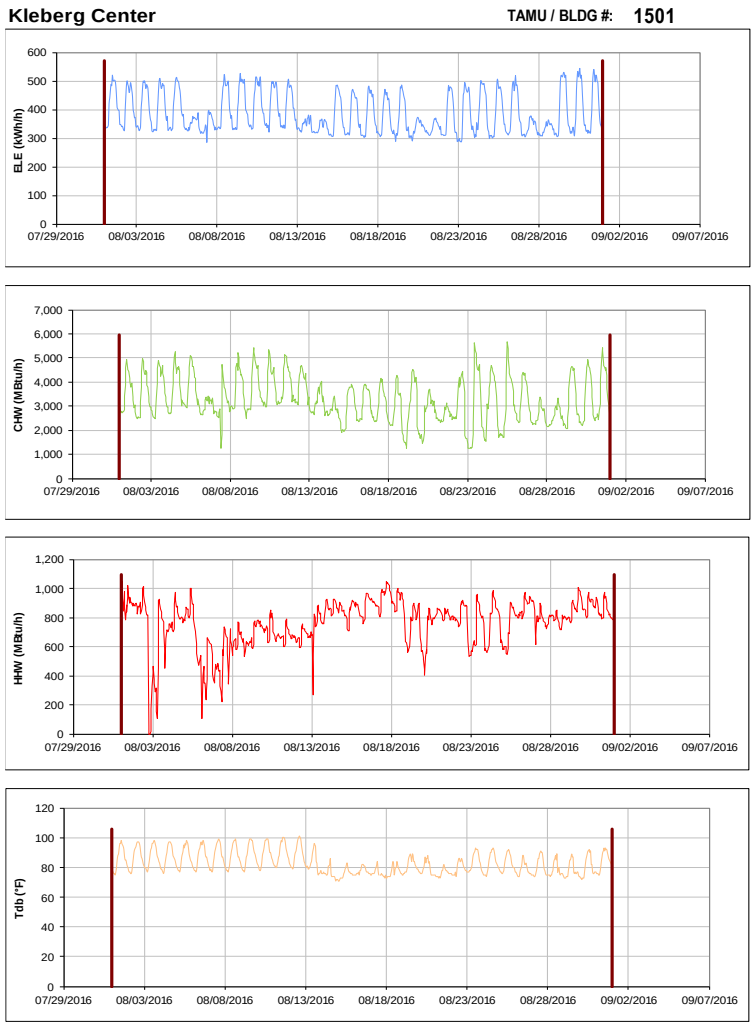


Figure III-147 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kleberg Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

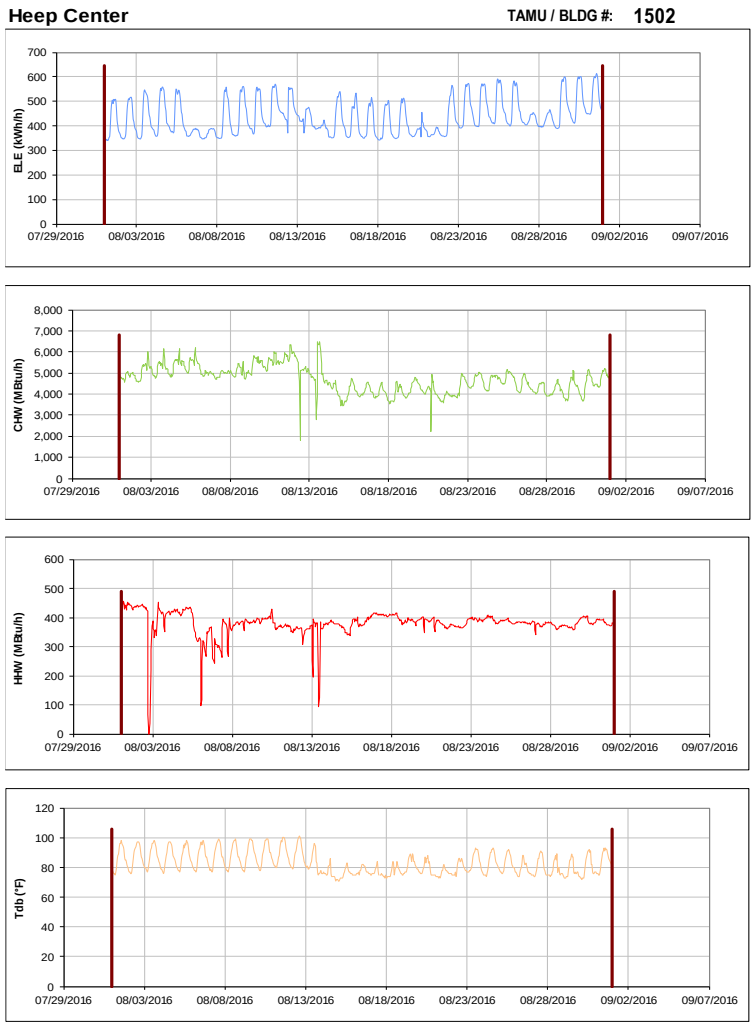


Figure III-148 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heep Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

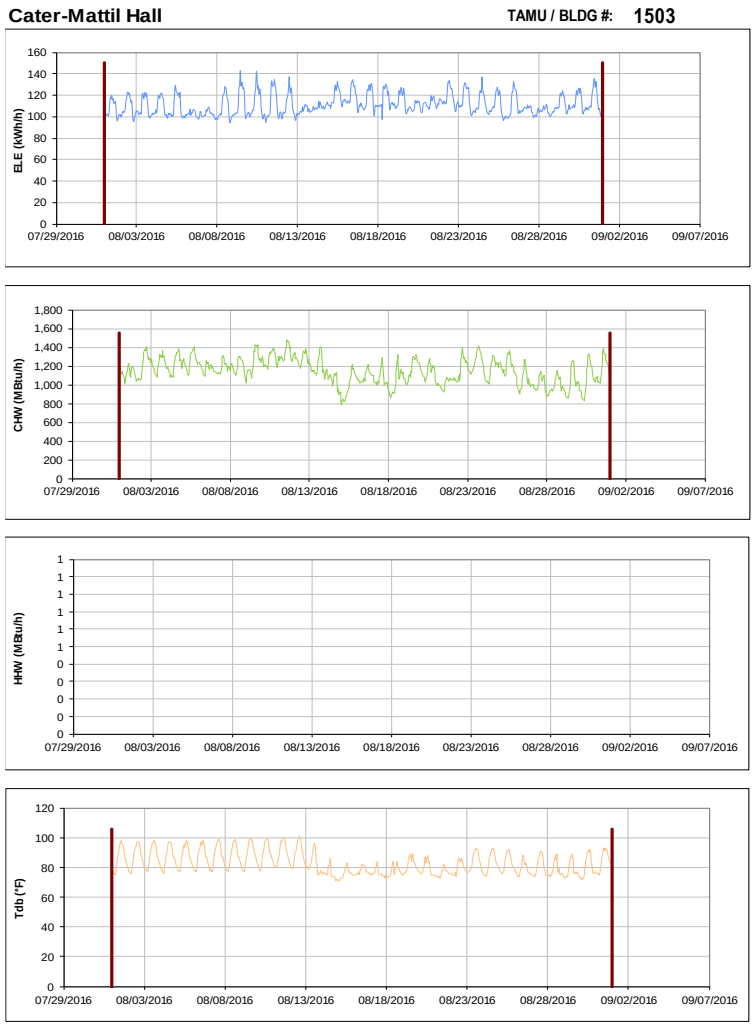


Figure III-149 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cater-Mattil Hall during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

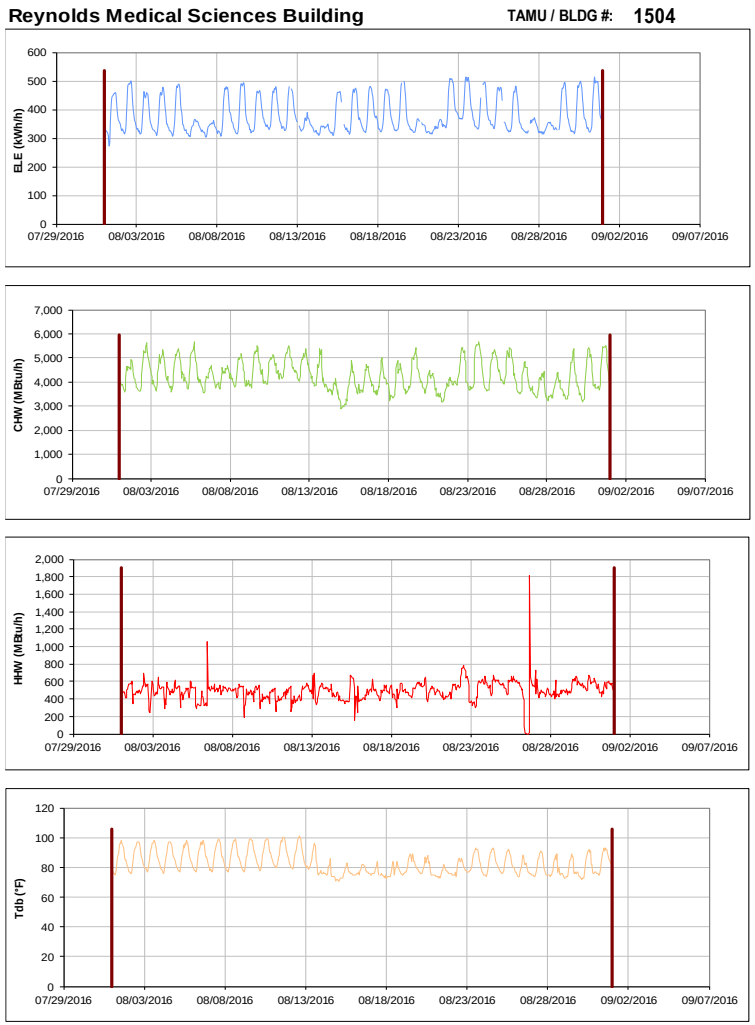


Figure III-150 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reynolds Medical Sciences Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

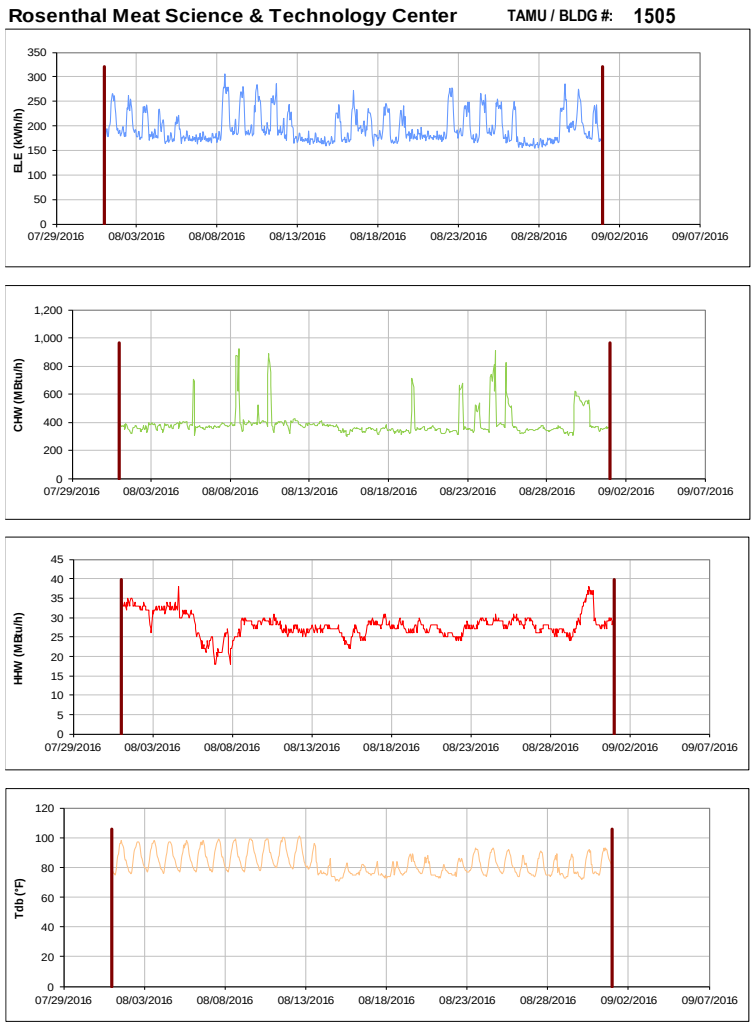


Figure III-151 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rosenthal Meat Science & Technology Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

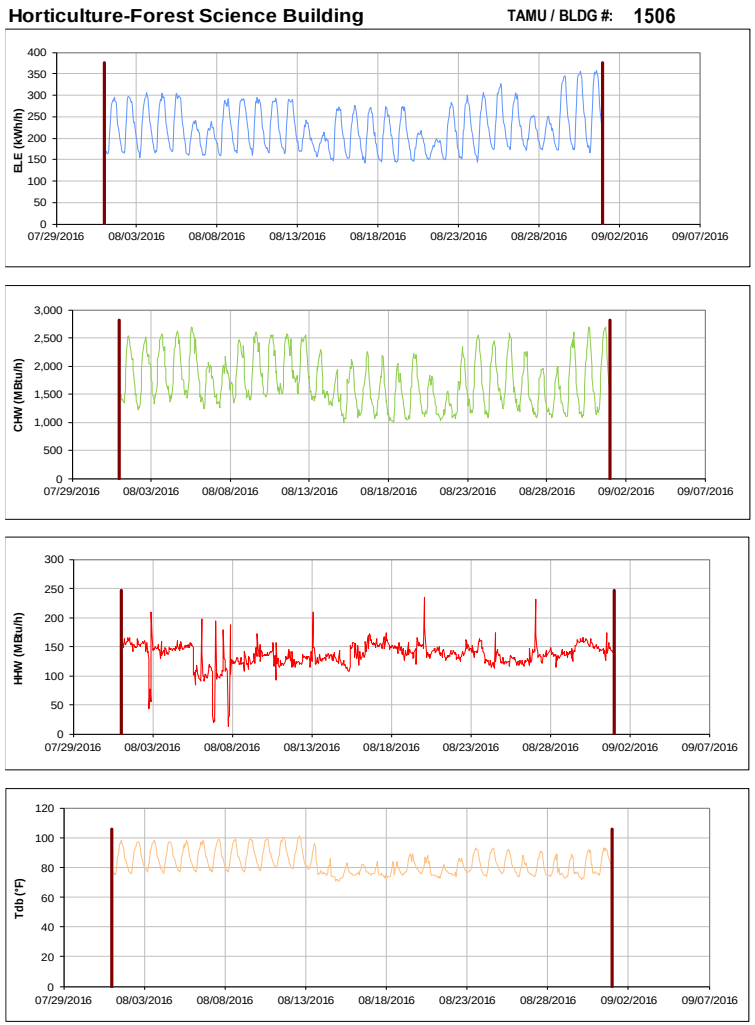


Figure III-152 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Horticulture-Forest Science Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

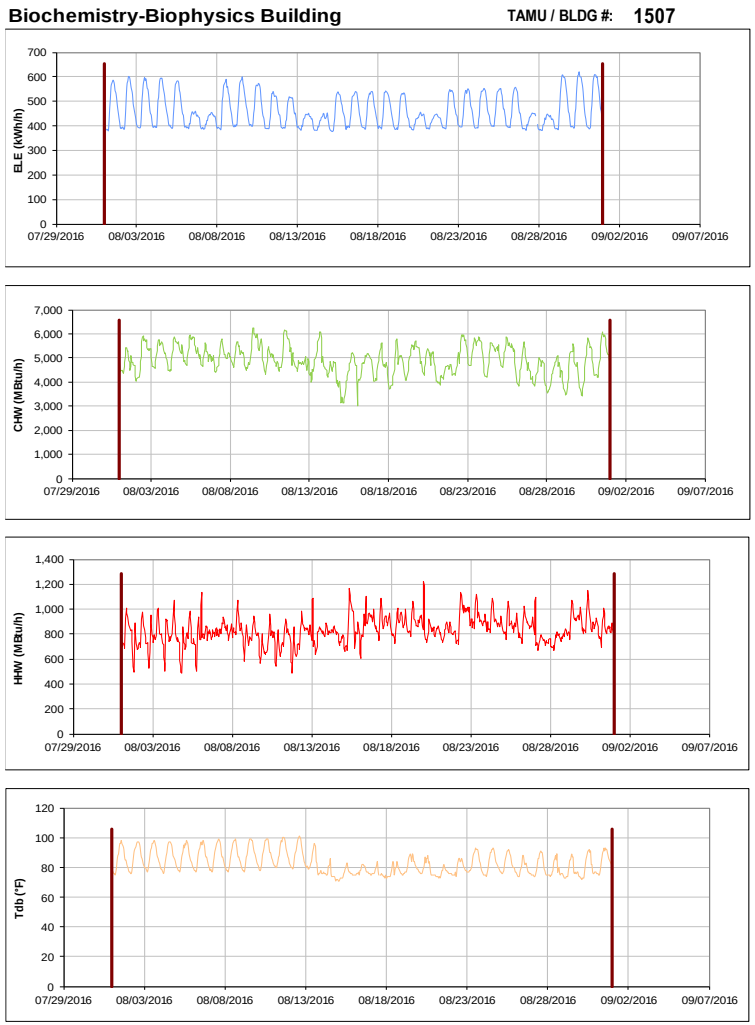


Figure III-153 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biochemistry-Biophysics Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

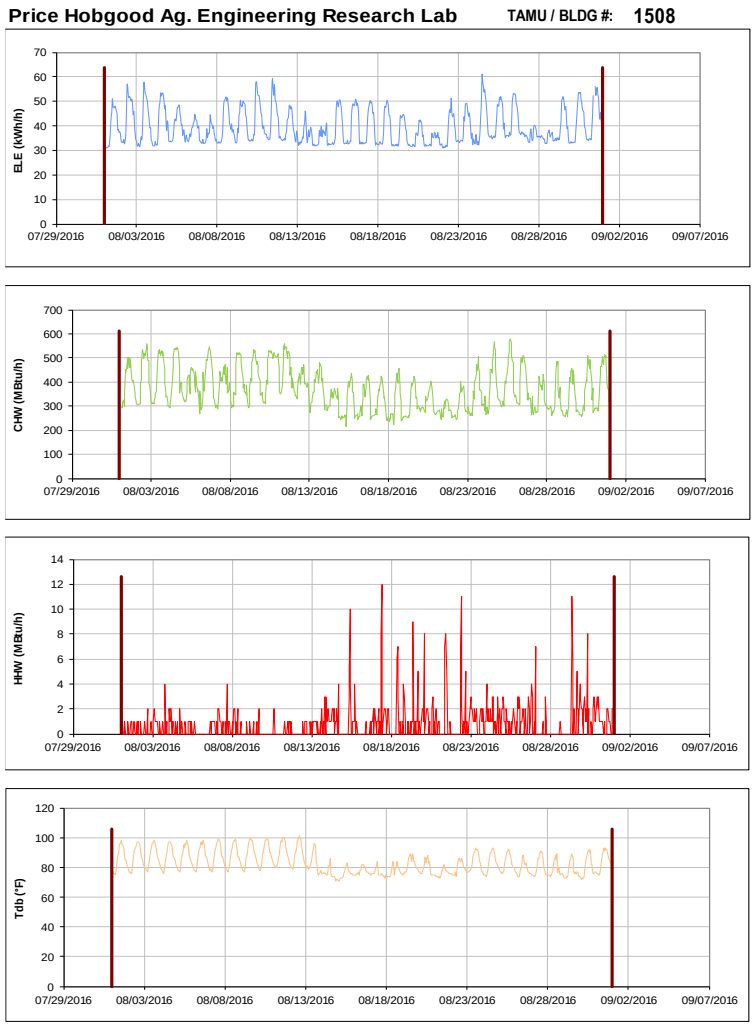


Figure III-154 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Price Hobgood Ag. Engineering Research Lab during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

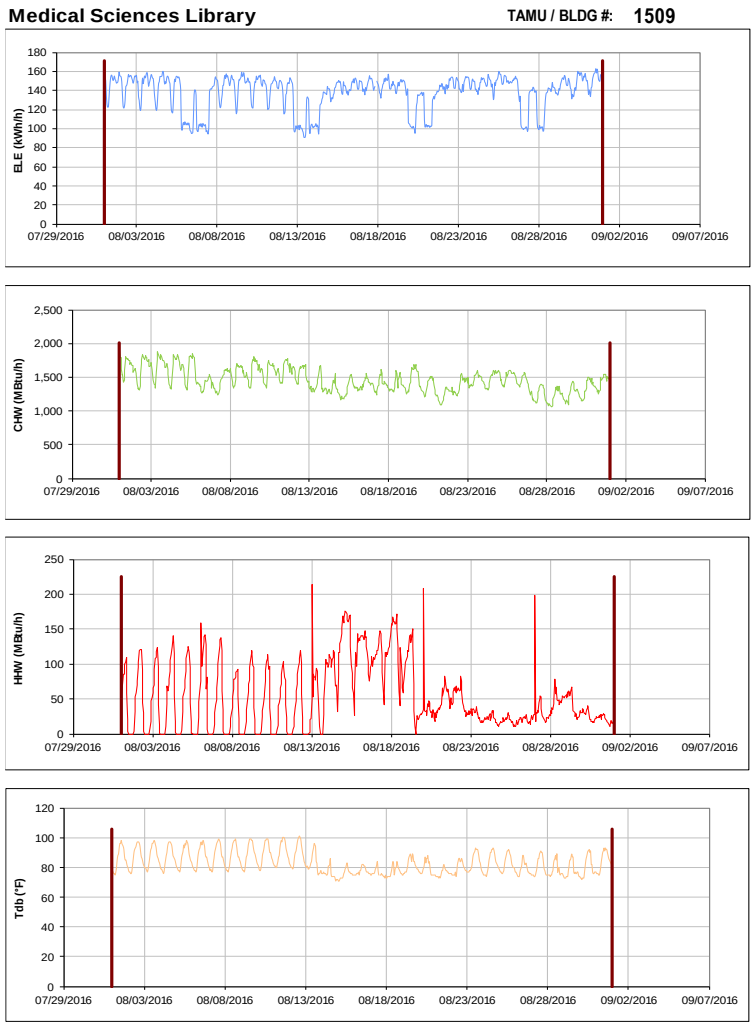


Figure III-155 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Medical Sciences Library during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

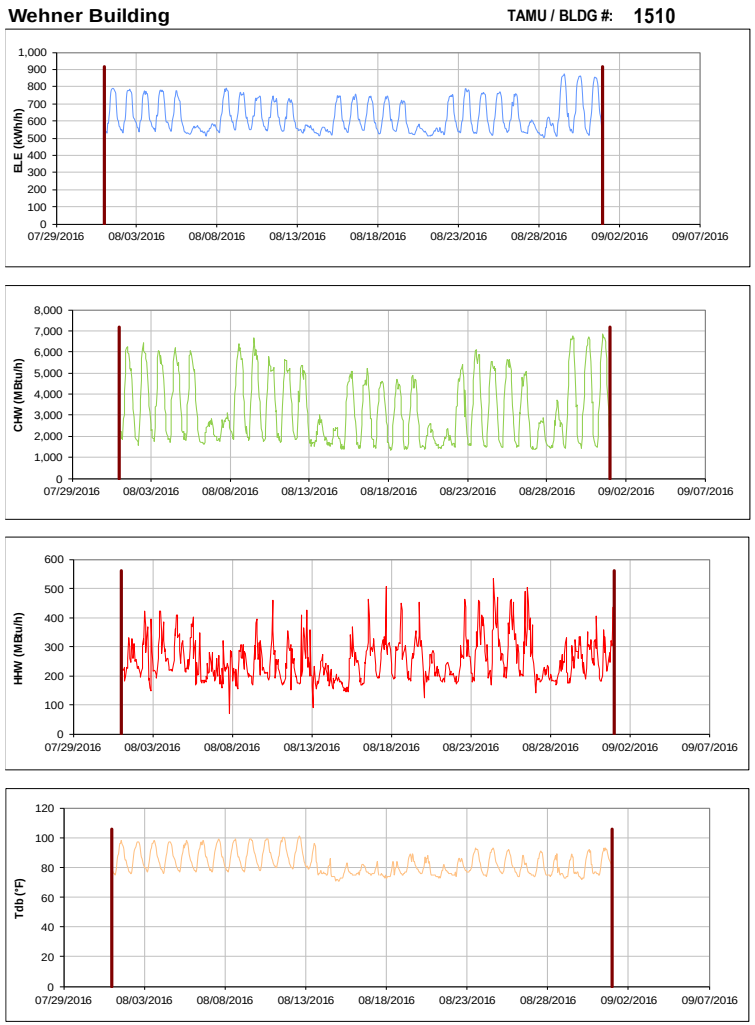


Figure III-156 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wehner Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

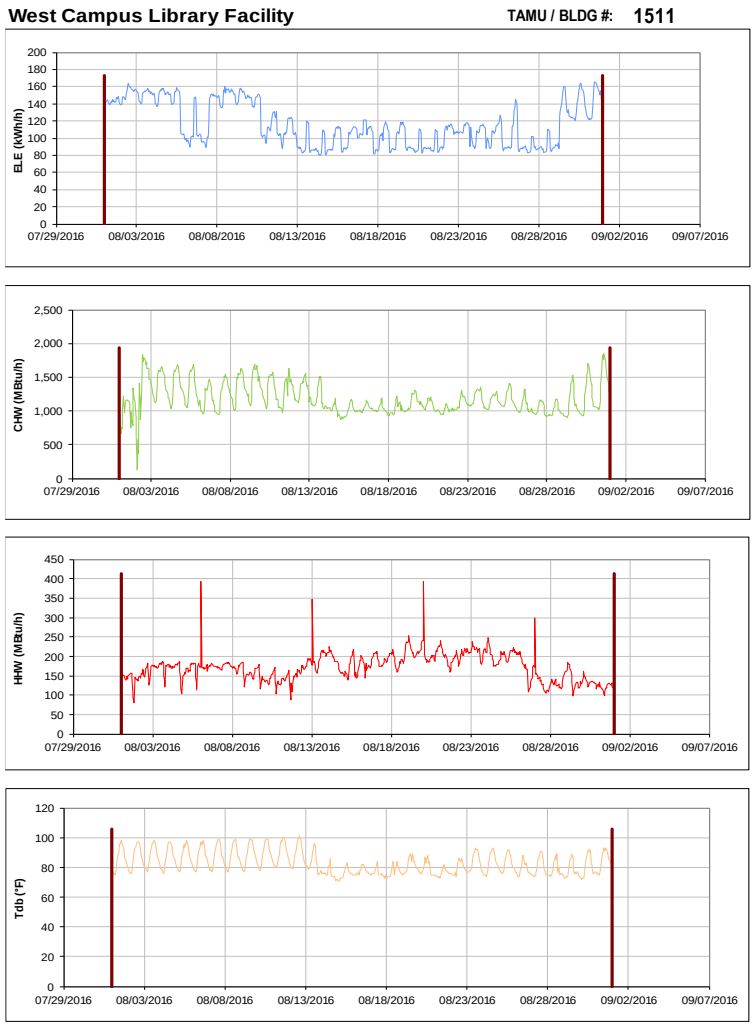


Figure III-157 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for West Campus Library Facility during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

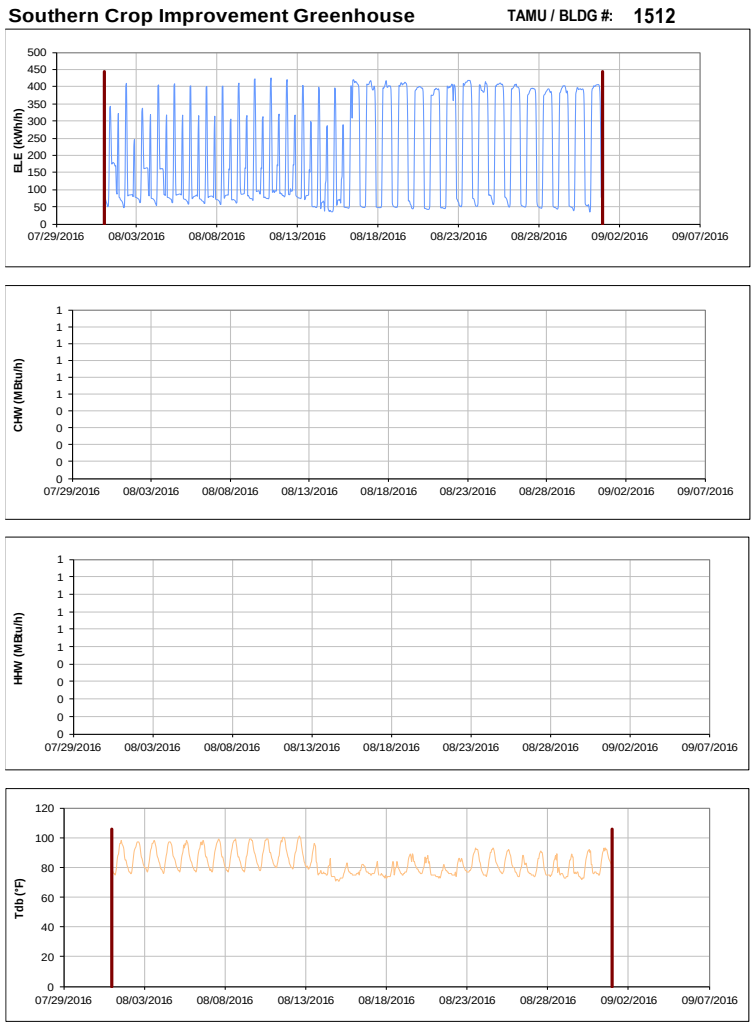


Figure III-158 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Southern Crop Improvement Greenhouse during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

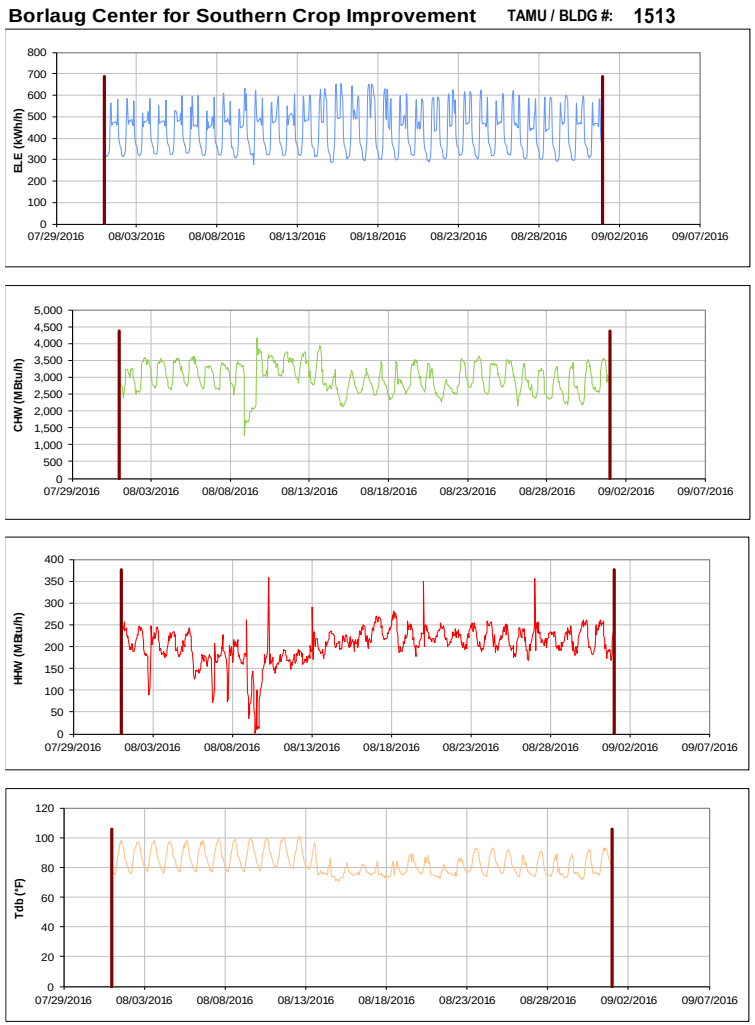


Figure III-159 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Borlaug Center for Southern Crop Improvement during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

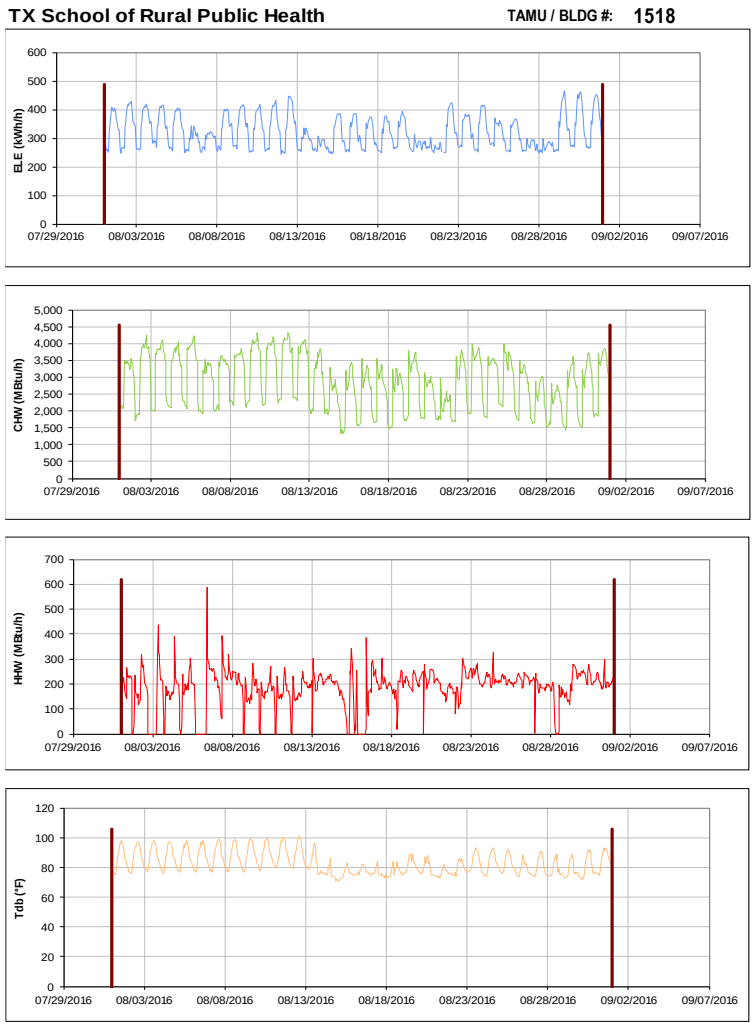


Figure III-160 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TX School of Rural Public Health during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

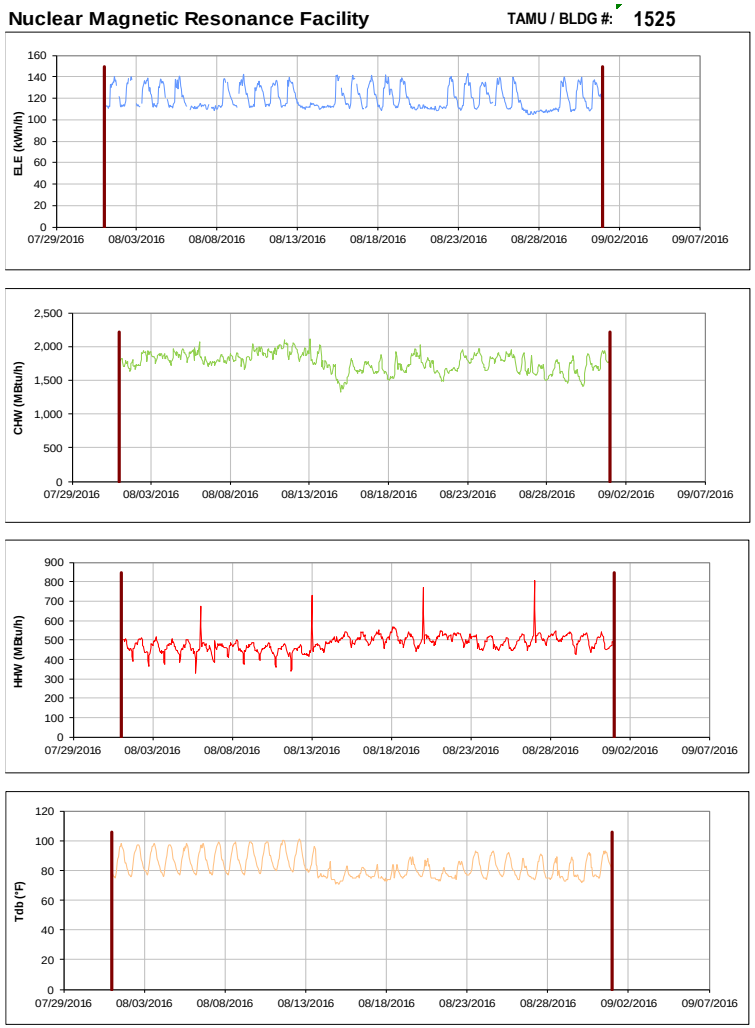


Figure III-161 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Nuclear Magnetic Resonance Facility during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

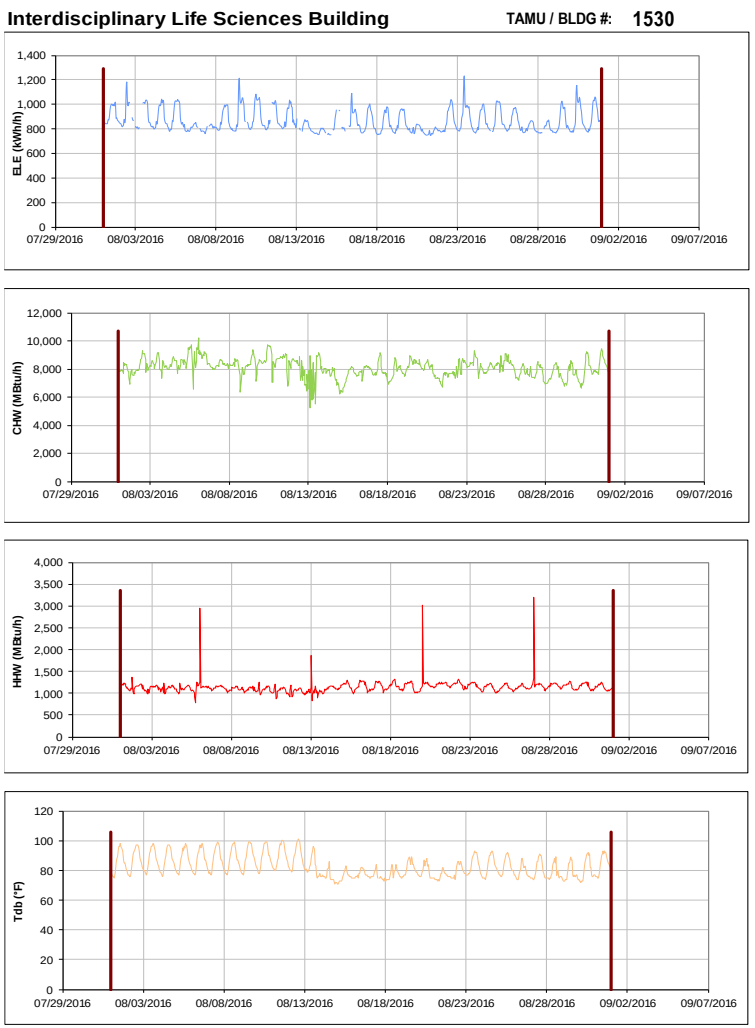


Figure III-162 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Interdisciplinary Life Sciences Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

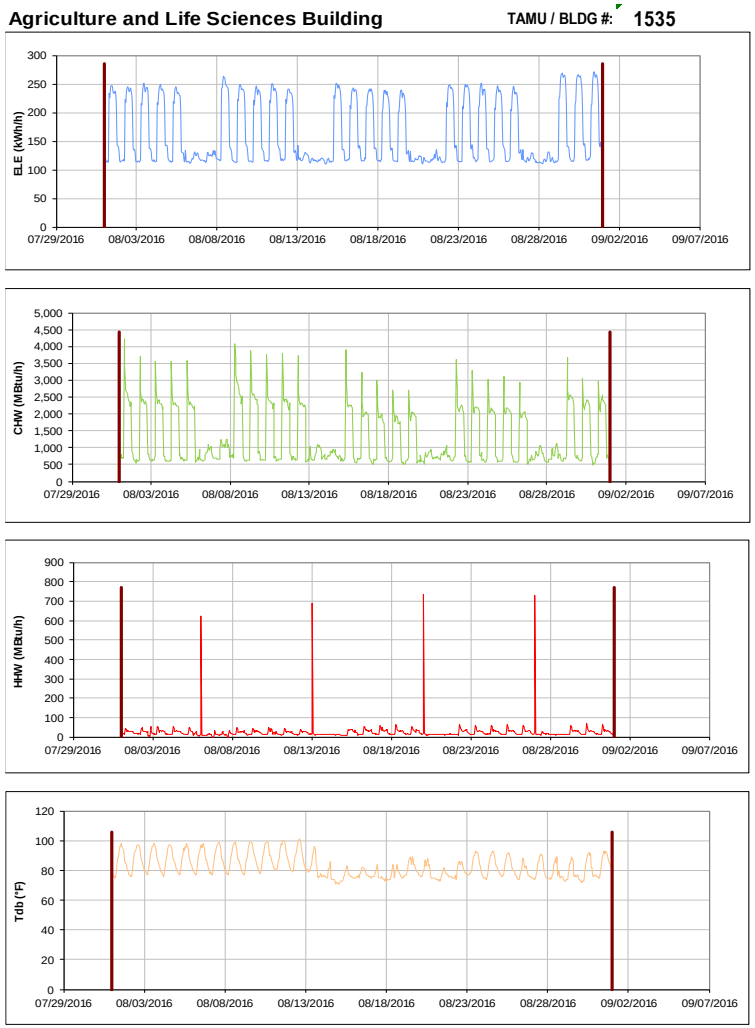


Figure III-163 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Agriculture and Life Sciences Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

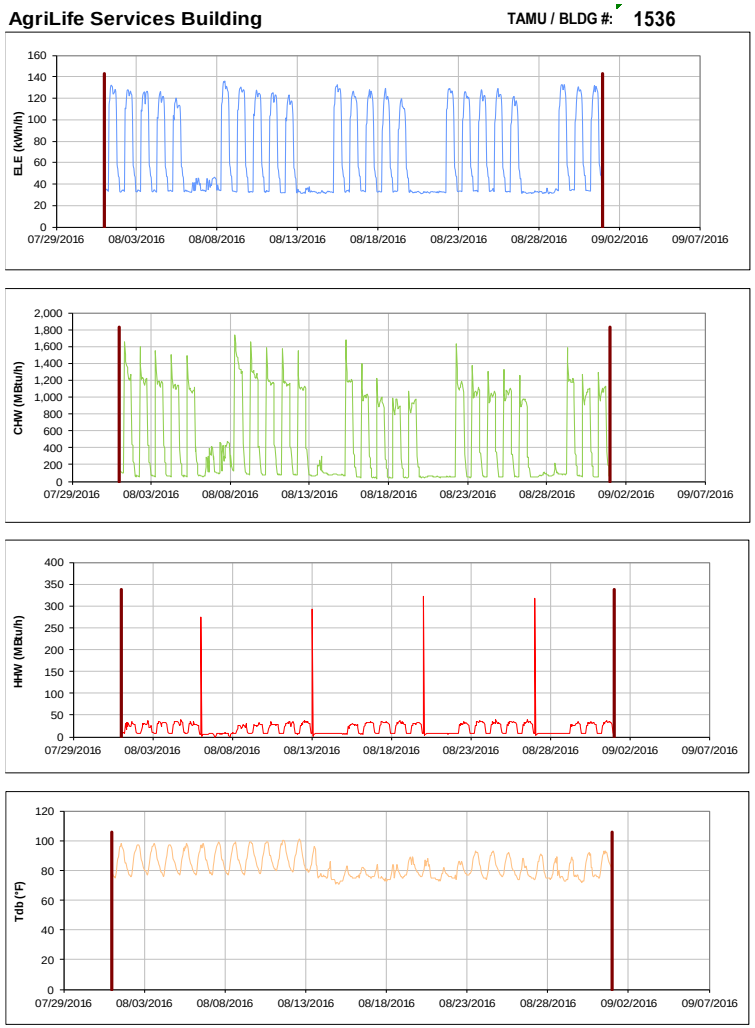


Figure III-164 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for AgriLife Services Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

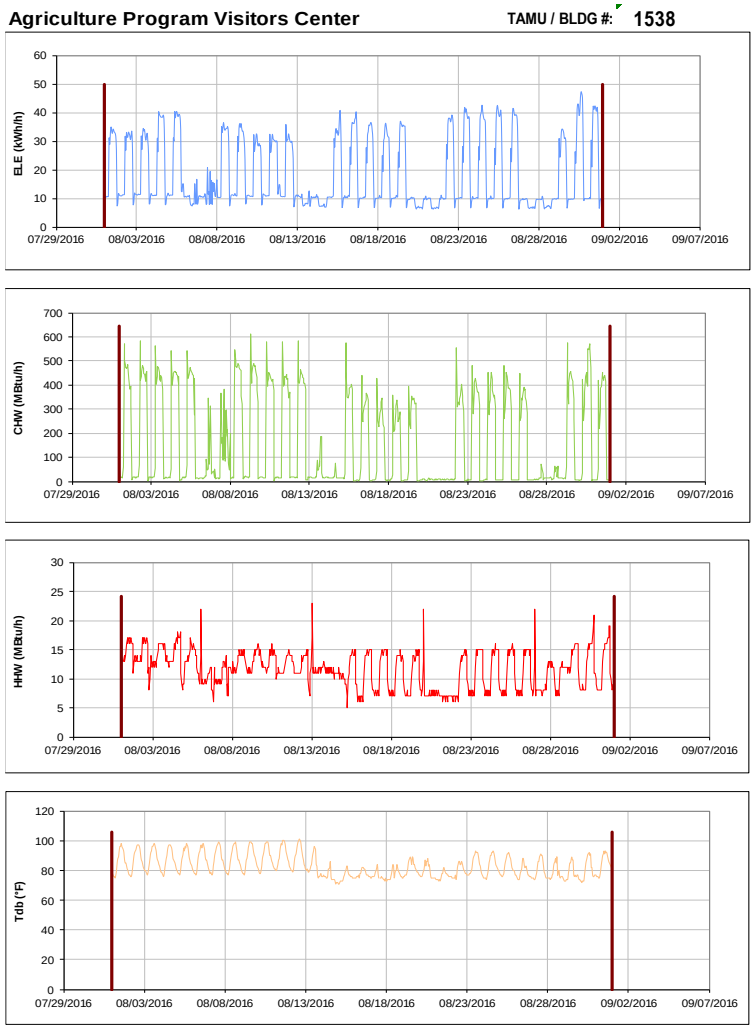


Figure III-165 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Agriculture Program Visitors Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

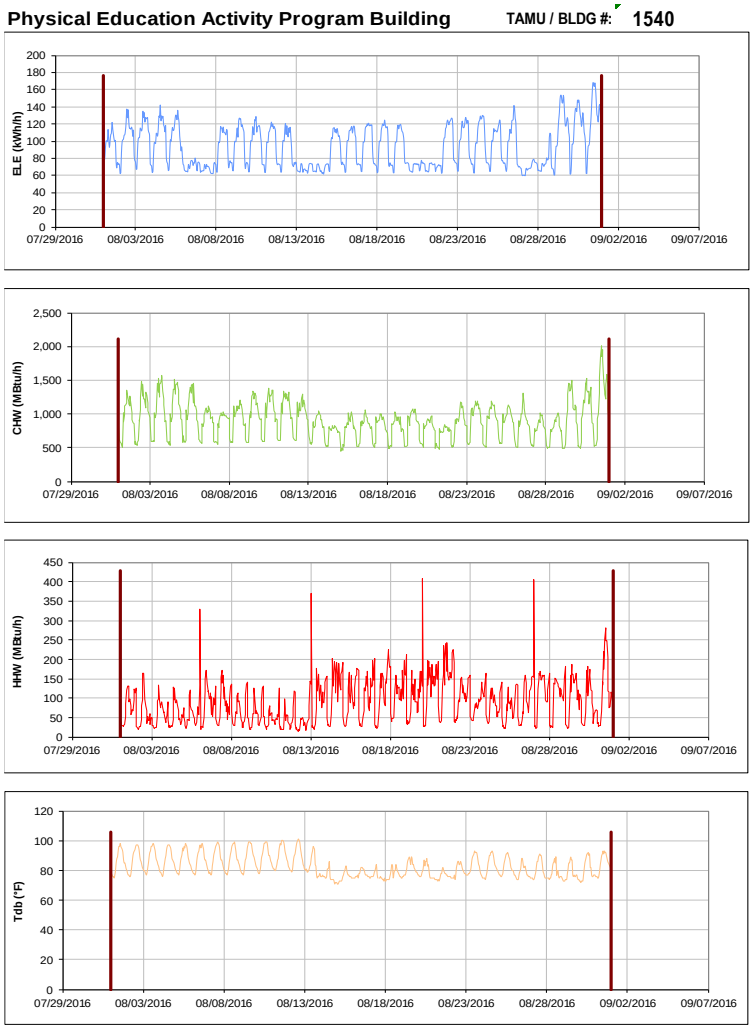


Figure III-166 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Physical Education Activity Program Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

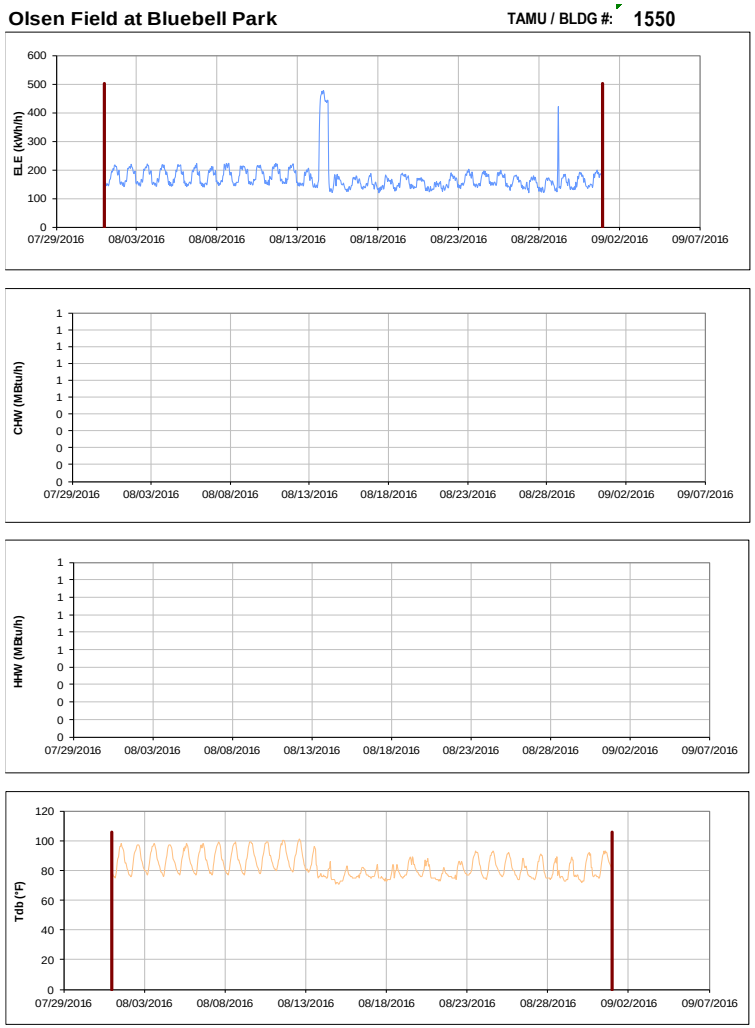


Figure III-167 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Olsen Field at Bluebell Park during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

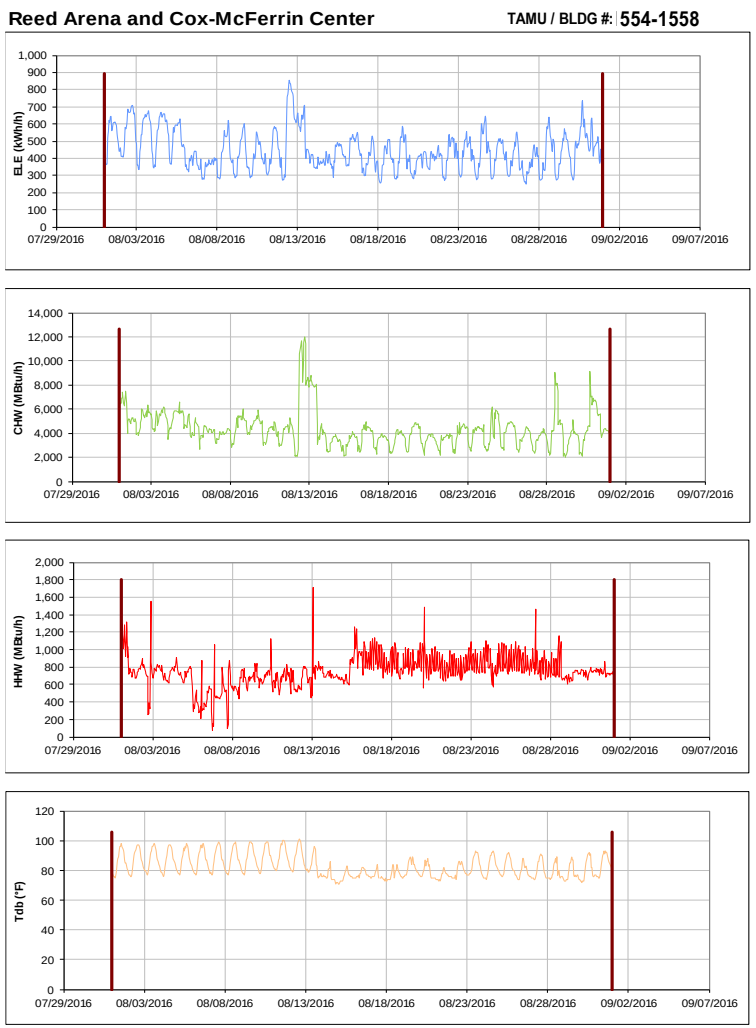


Figure III-168 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed Arena and Cox-McFerrin Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

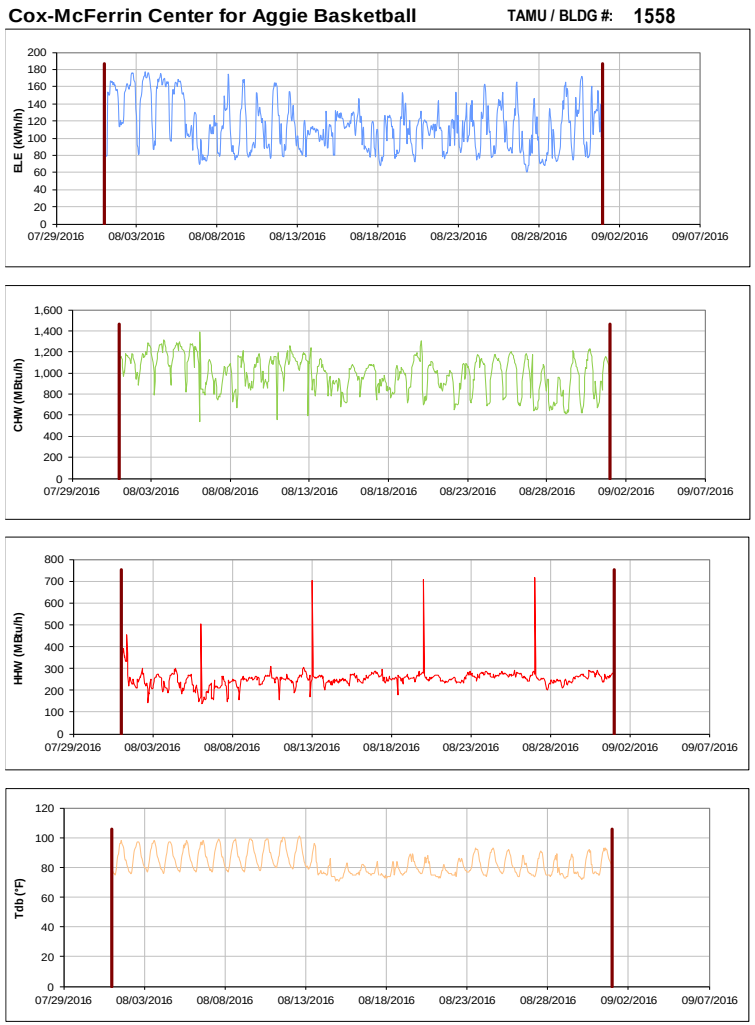


Figure III-169 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cox-McFerrin Center for Aggie Basketball during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

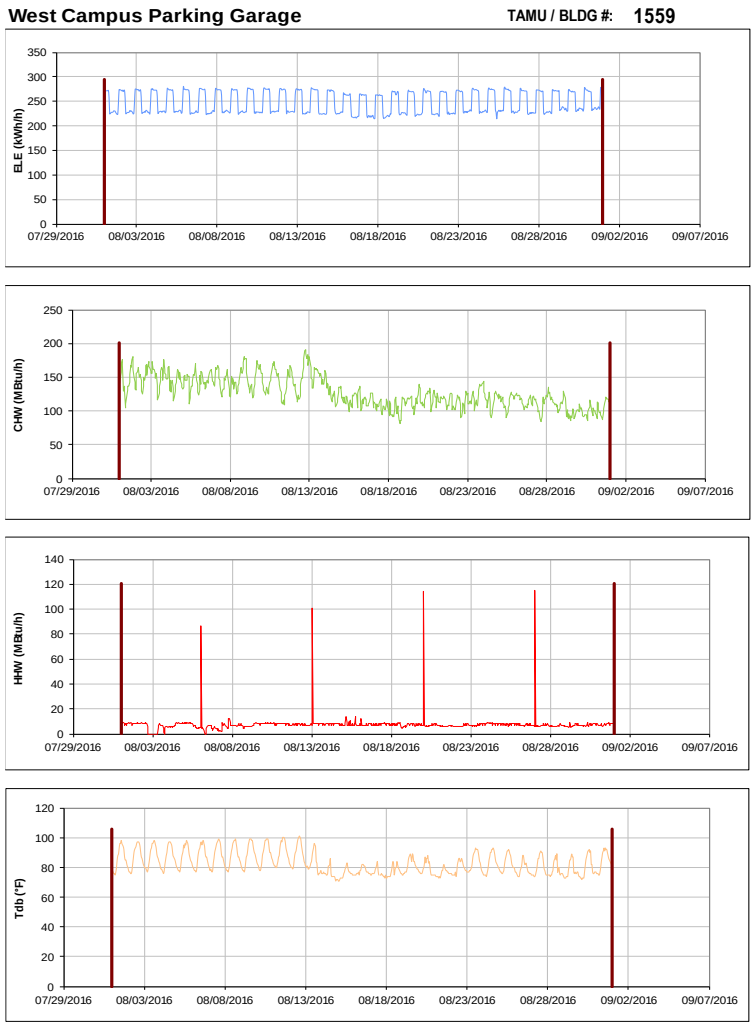


Figure III-170 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for West Campus Parking Garage during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Figure III-171 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Student Recreation Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

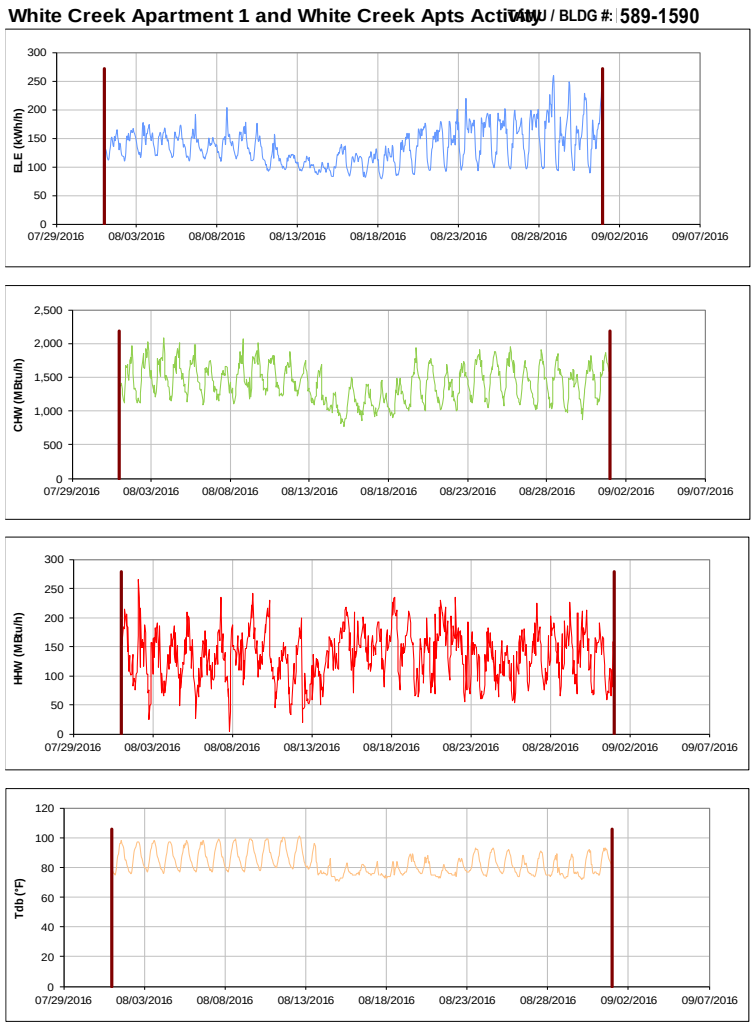


Figure III-172 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 1 and White Creek Apts Activity Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, T

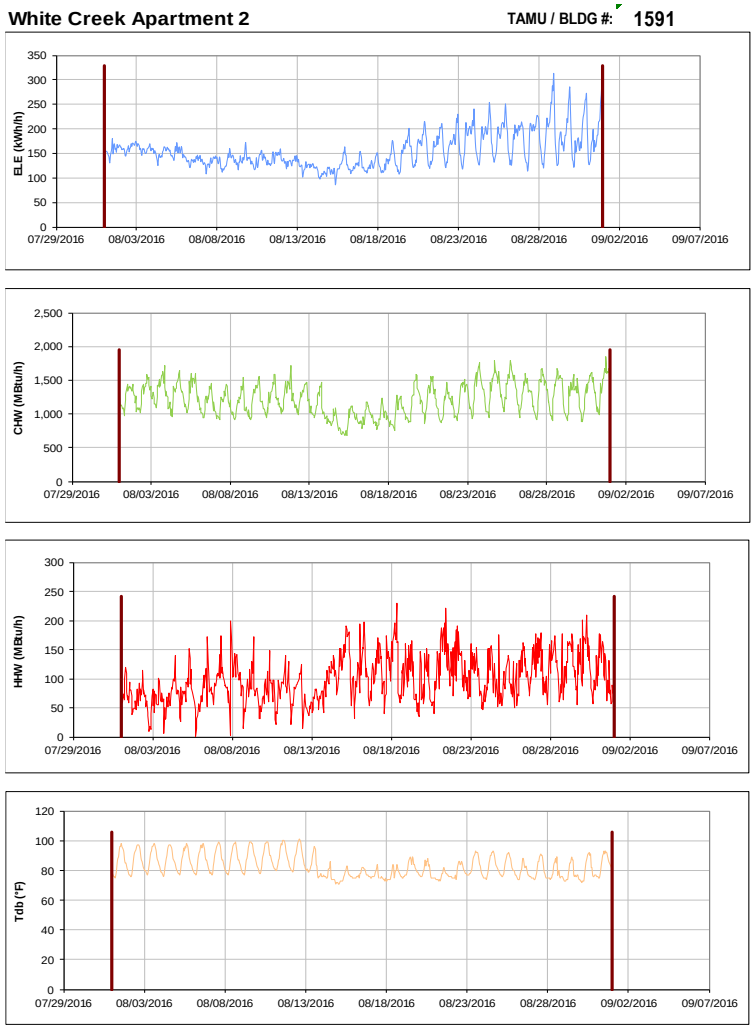


Figure III-173 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 2 during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

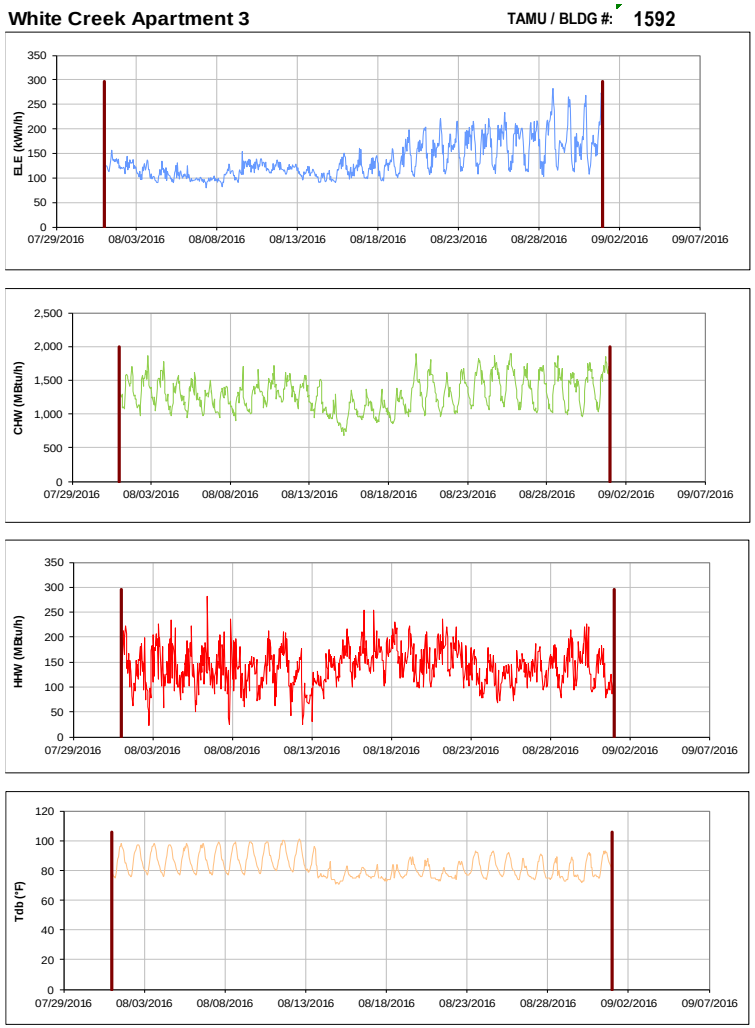


Figure III-174 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 3 during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

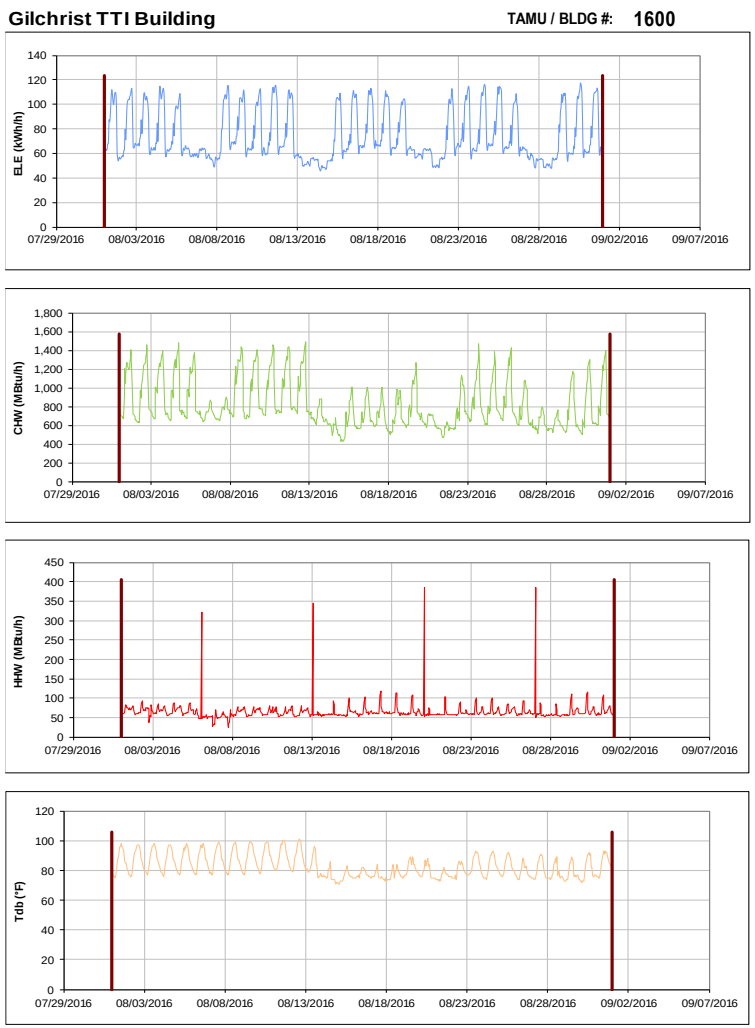


Figure III-175 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Gilchrist TTI Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

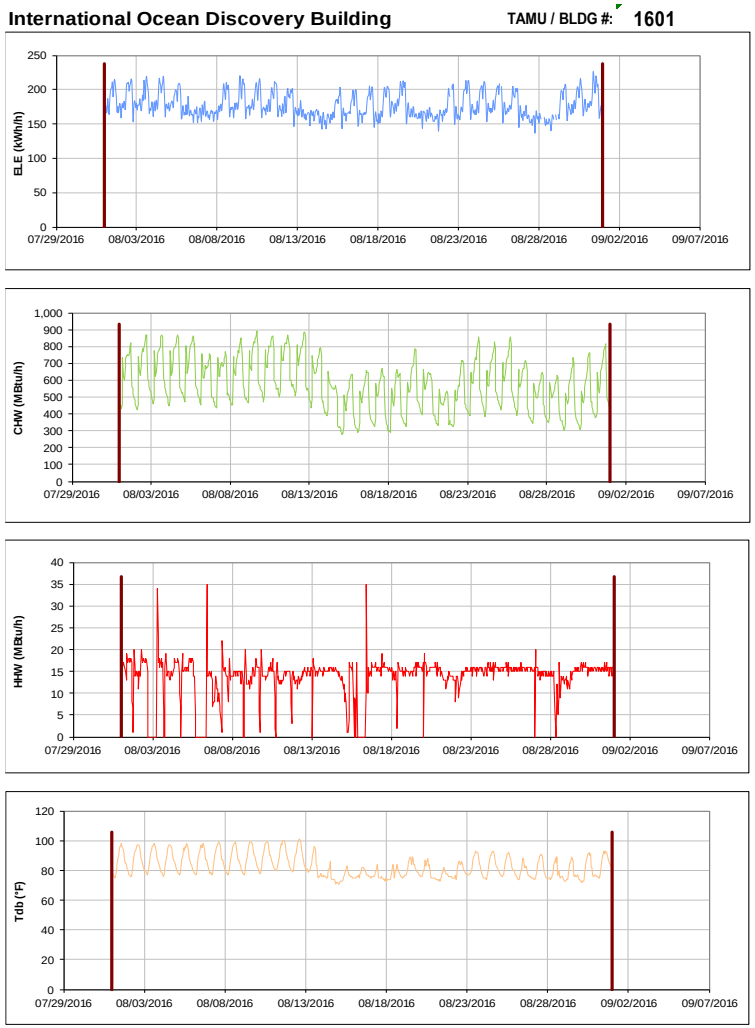


Figure III-176 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for International Ocean Discovery Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

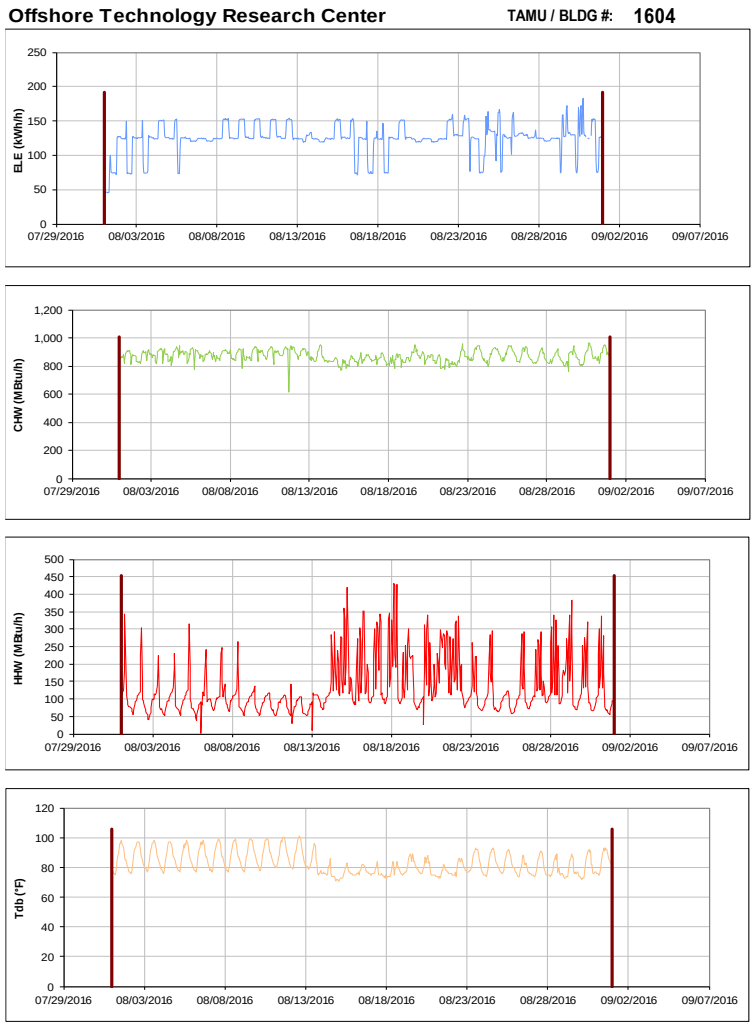


Figure III-177 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Offshore Technology Research Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

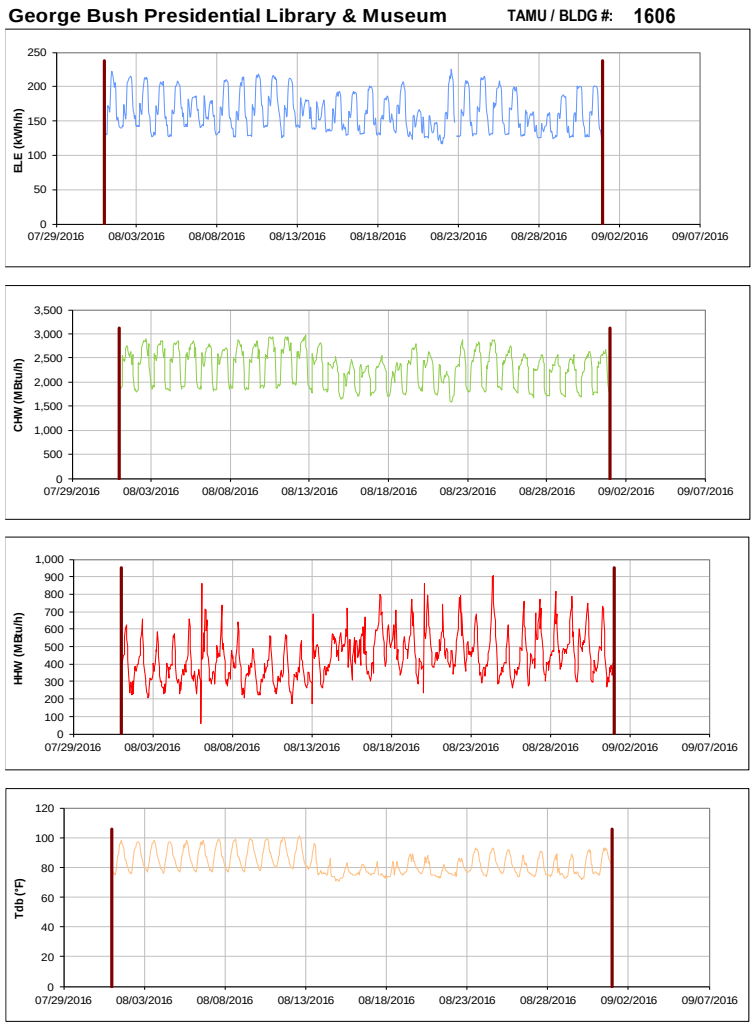


Figure III-178 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for George Bush Presidential Library & Museum during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

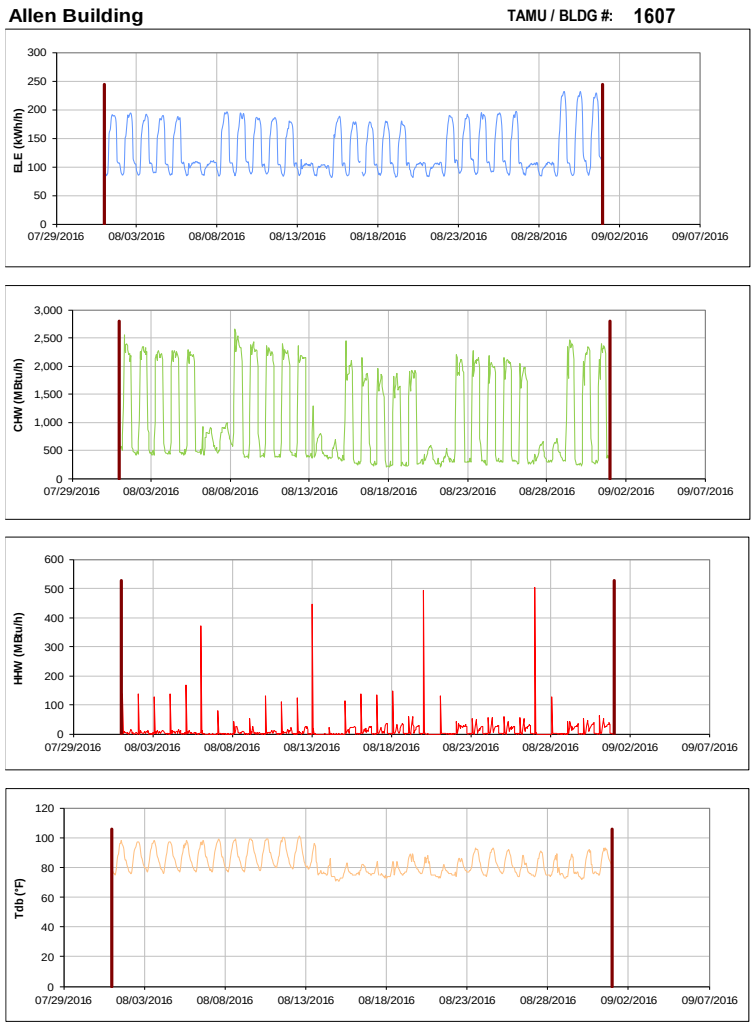


Figure III-179 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Allen Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

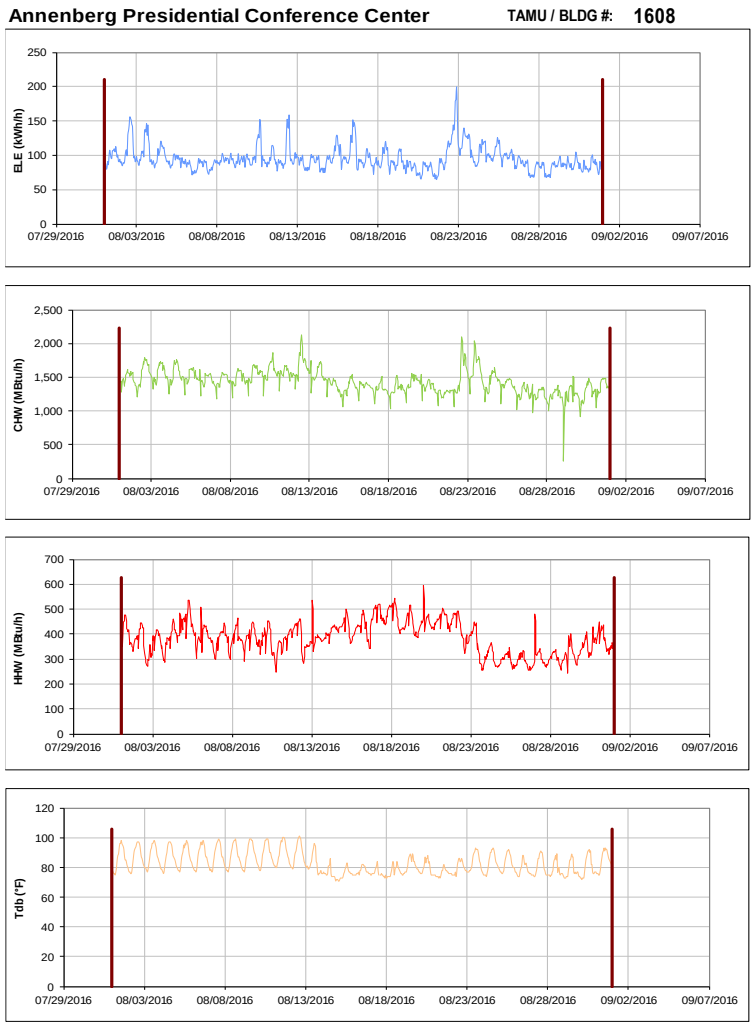


Figure III-180 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Annenberg Presidential Conference Center during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

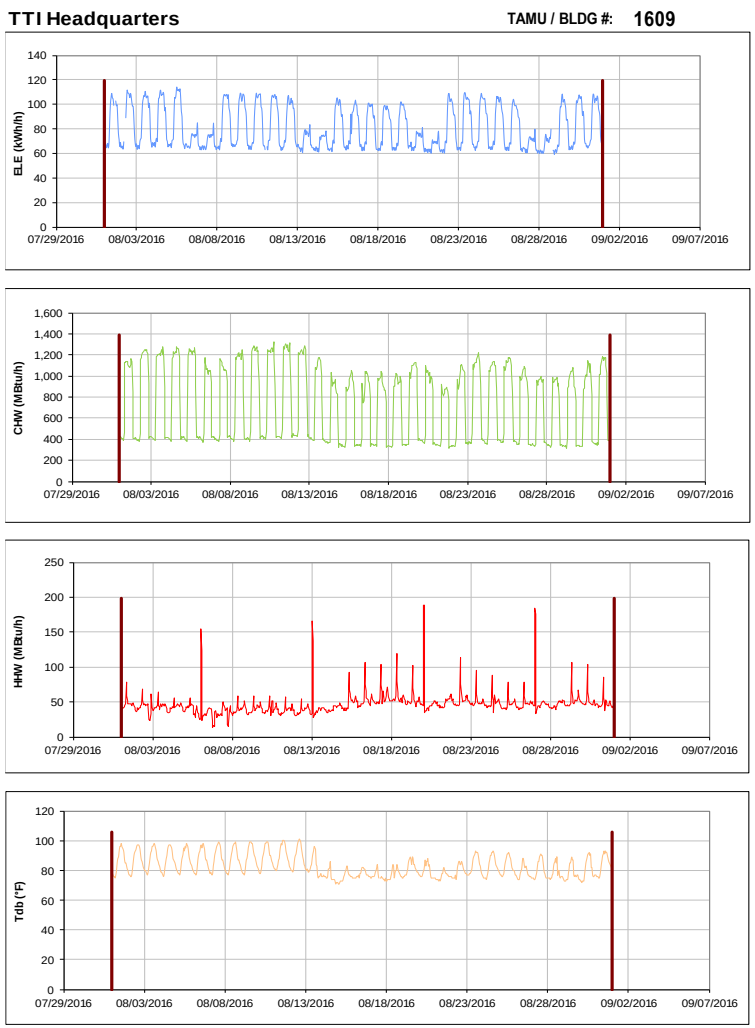


Figure III-181 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TTI Headquarters during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

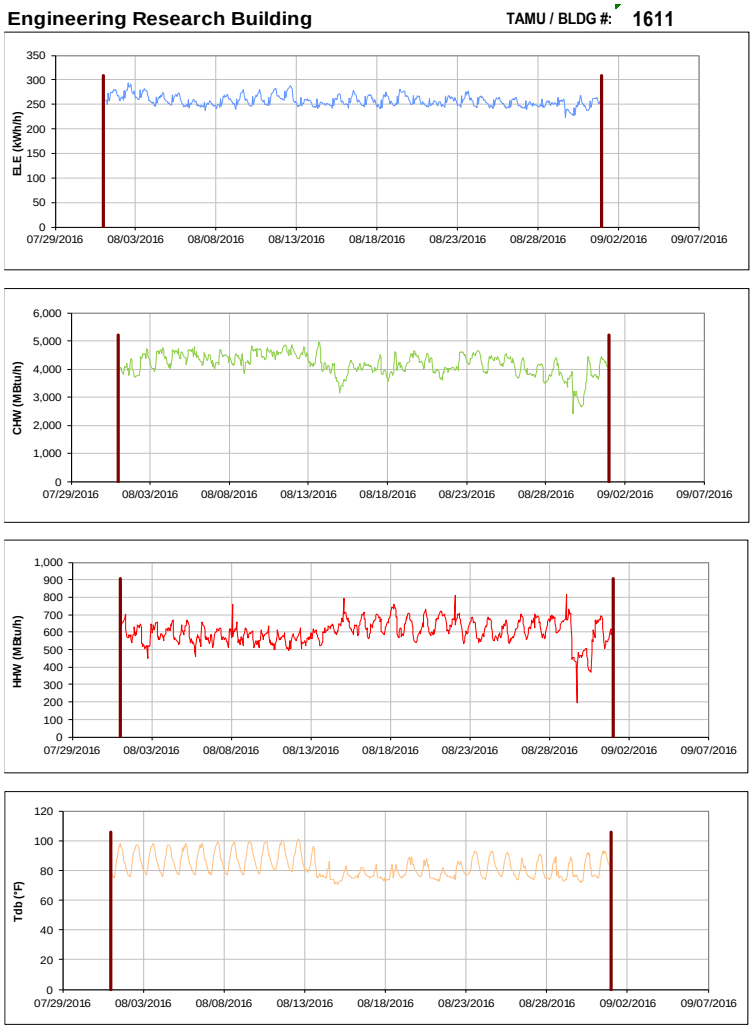


Figure III-182 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Engineering Research Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Figure III-183 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for General Services Complex during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

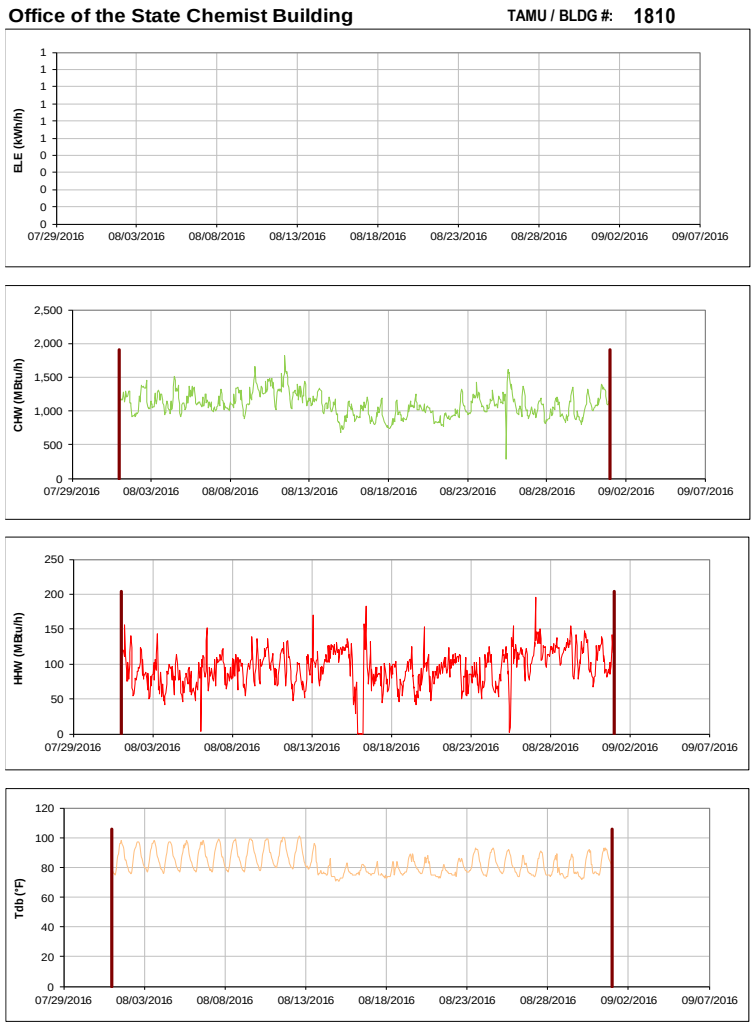


Figure III-184 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Office of the State Chemist Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

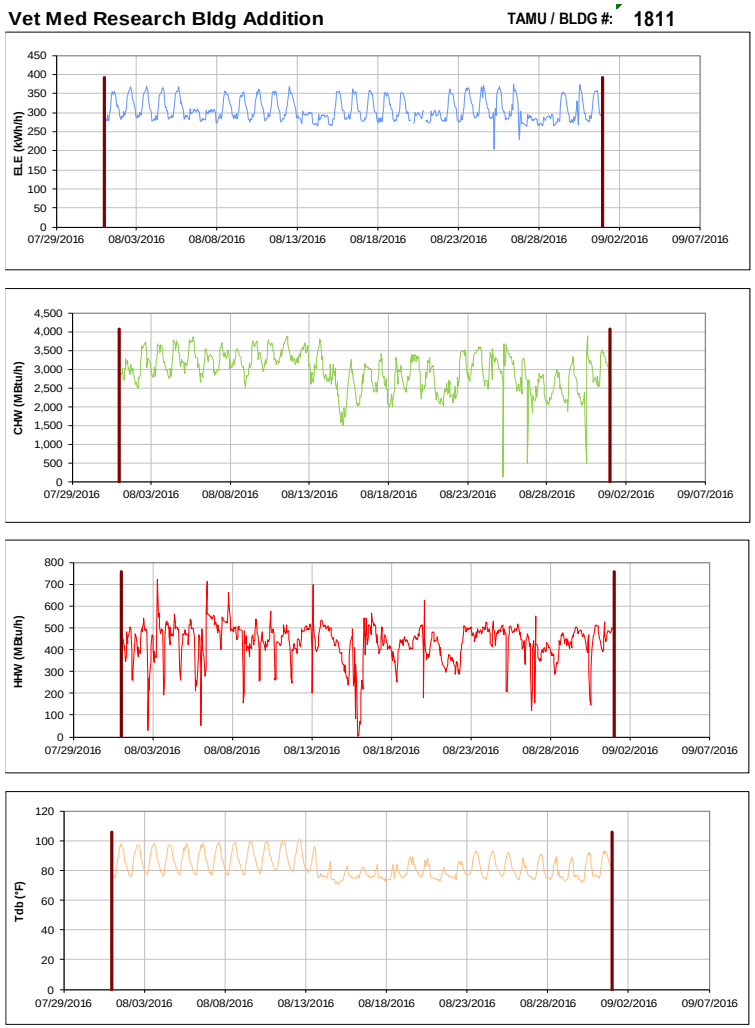


Figure III-185 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Vet Med Research Bldg Addition during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

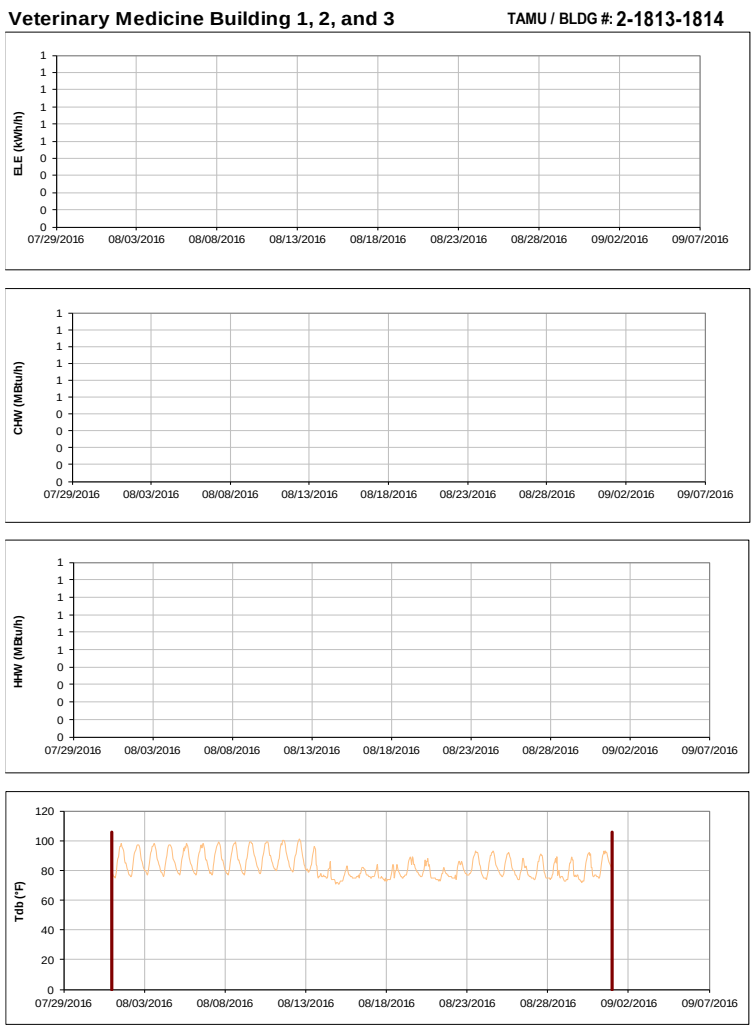


Figure III-186 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Medicine Building 1, 2, and 3 during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

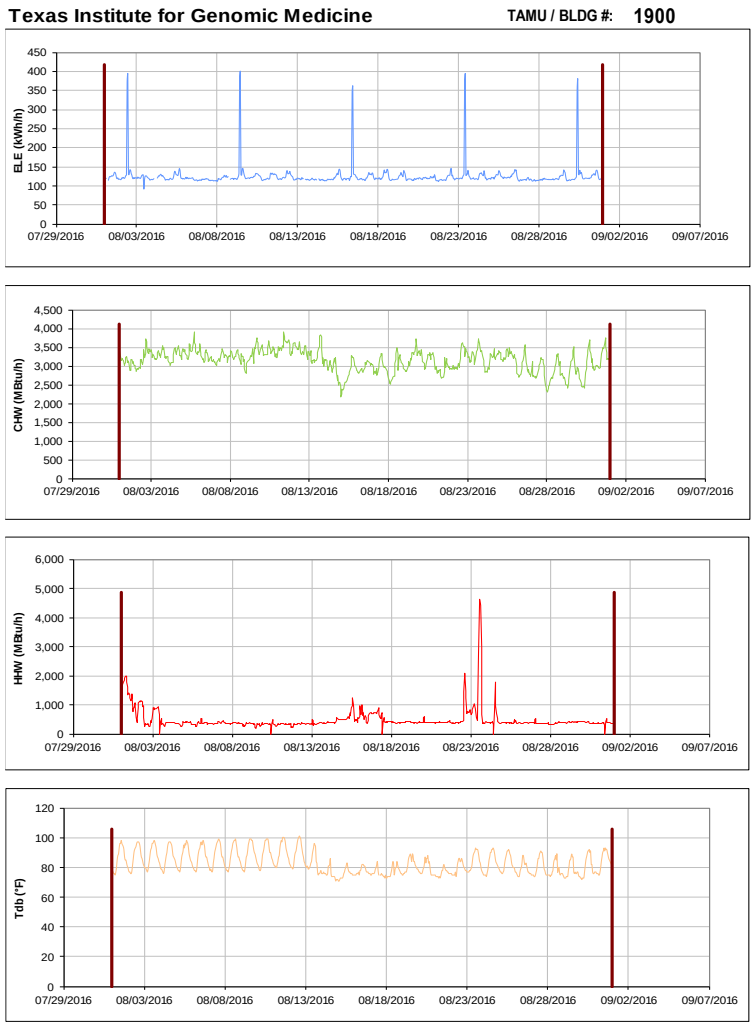


Figure III-187 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas Institute for Genomic Medicine during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

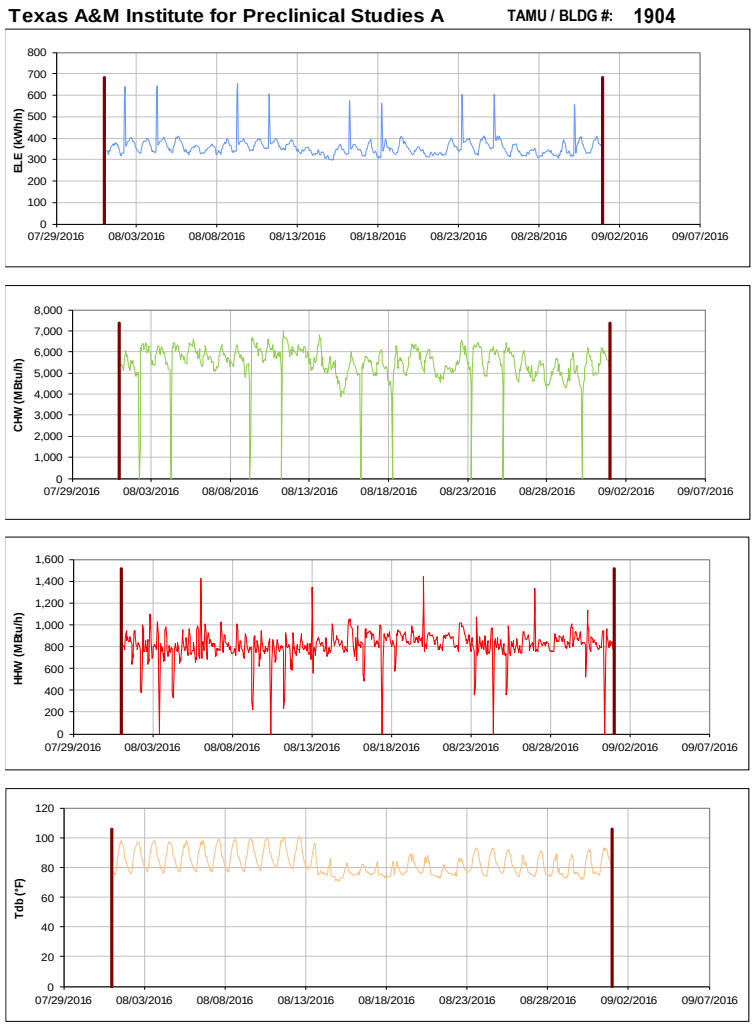


Figure III-188 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas A&M Institute for Preclinical Studies A during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

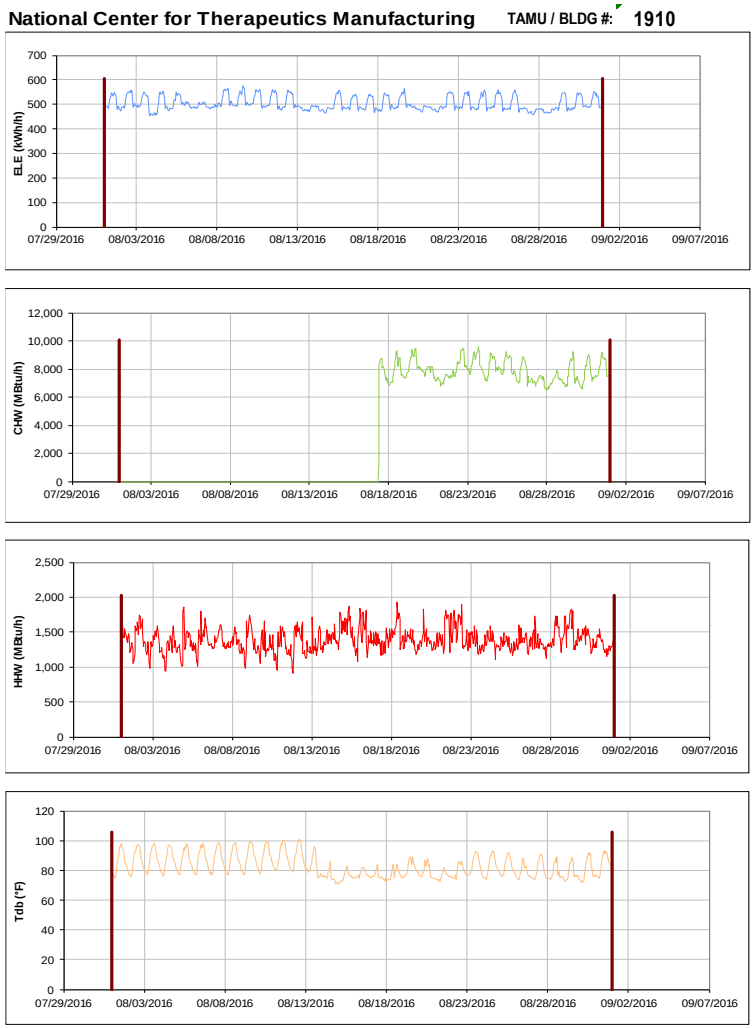


Figure III-189 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for National Center for Therapeutics Manufacturing during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

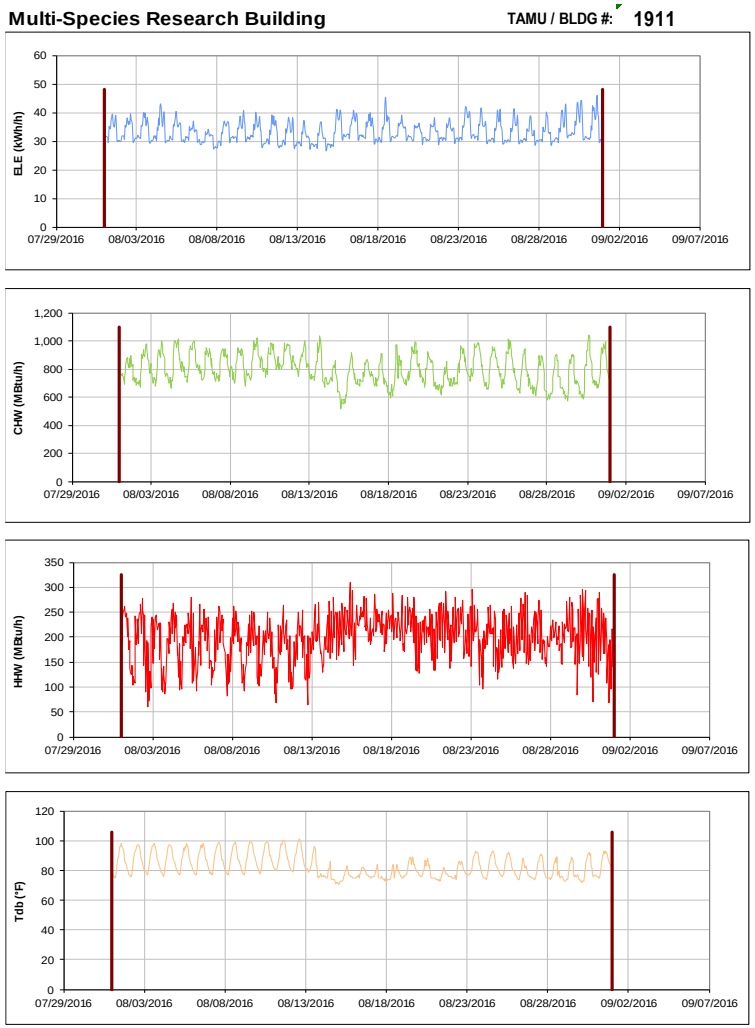


Figure III-190 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Multi-Species Research Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

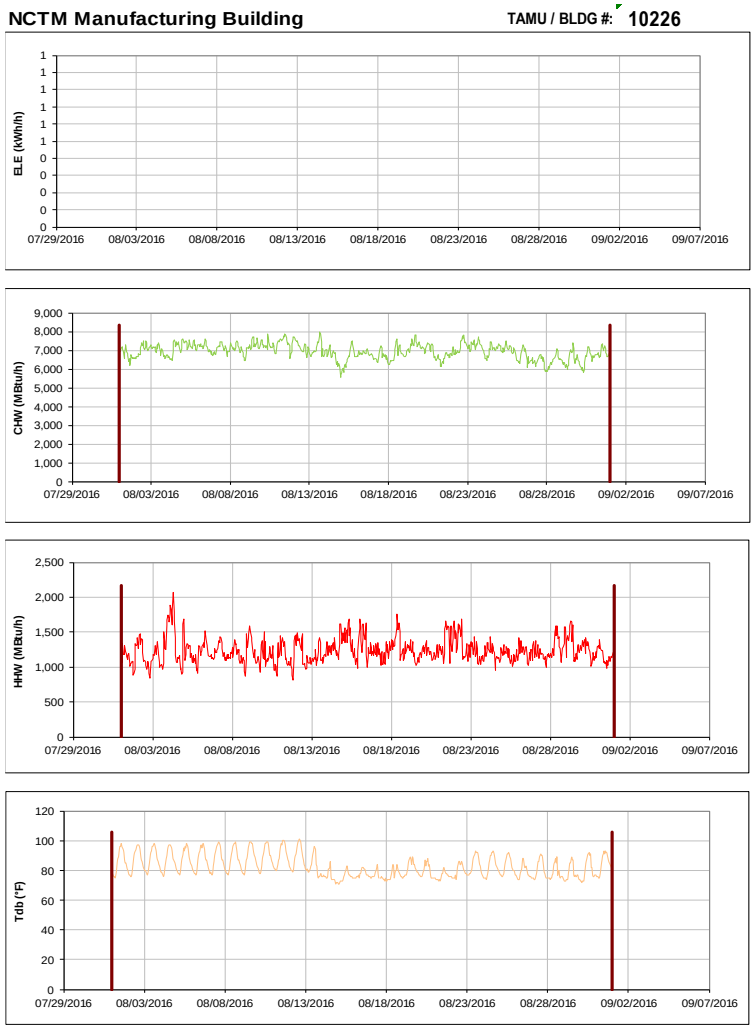


Figure III-191 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for NCTM Manufacturing Building during the Month of August 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

IV. Energy Balance Plots for August 2016 Consumption

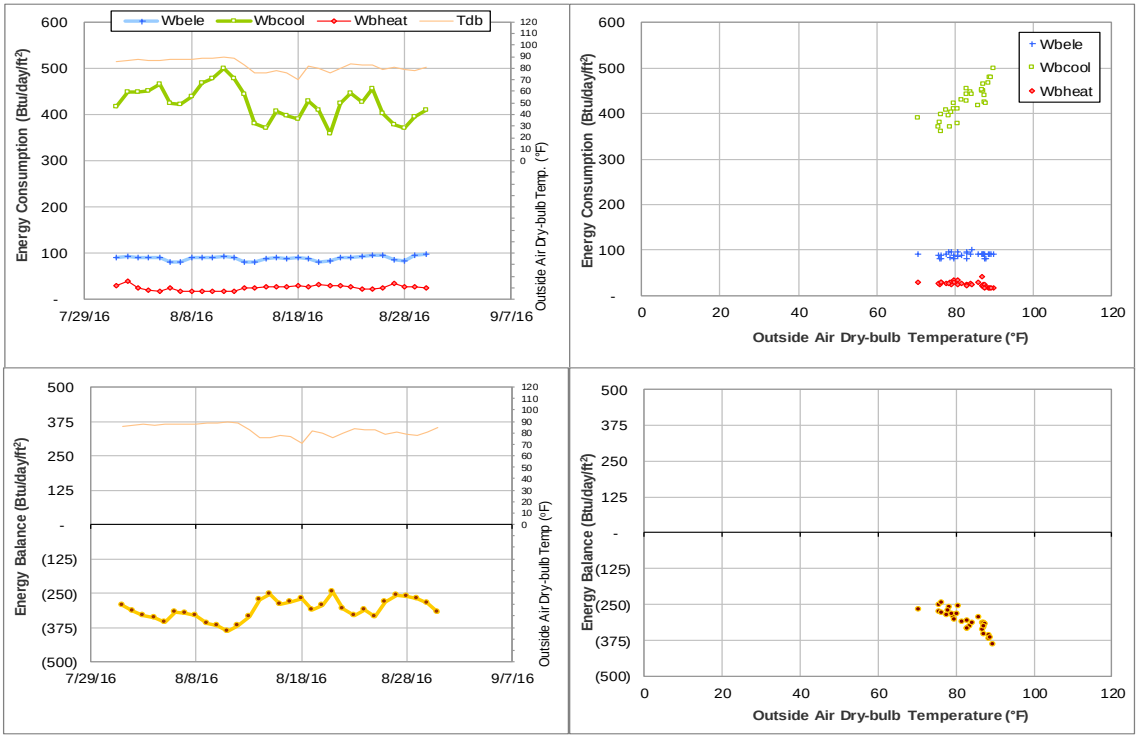


Figure IV-1 Emerging Technologies Building TAMU BLDG # 270 Energy Balance Plot during August 2016

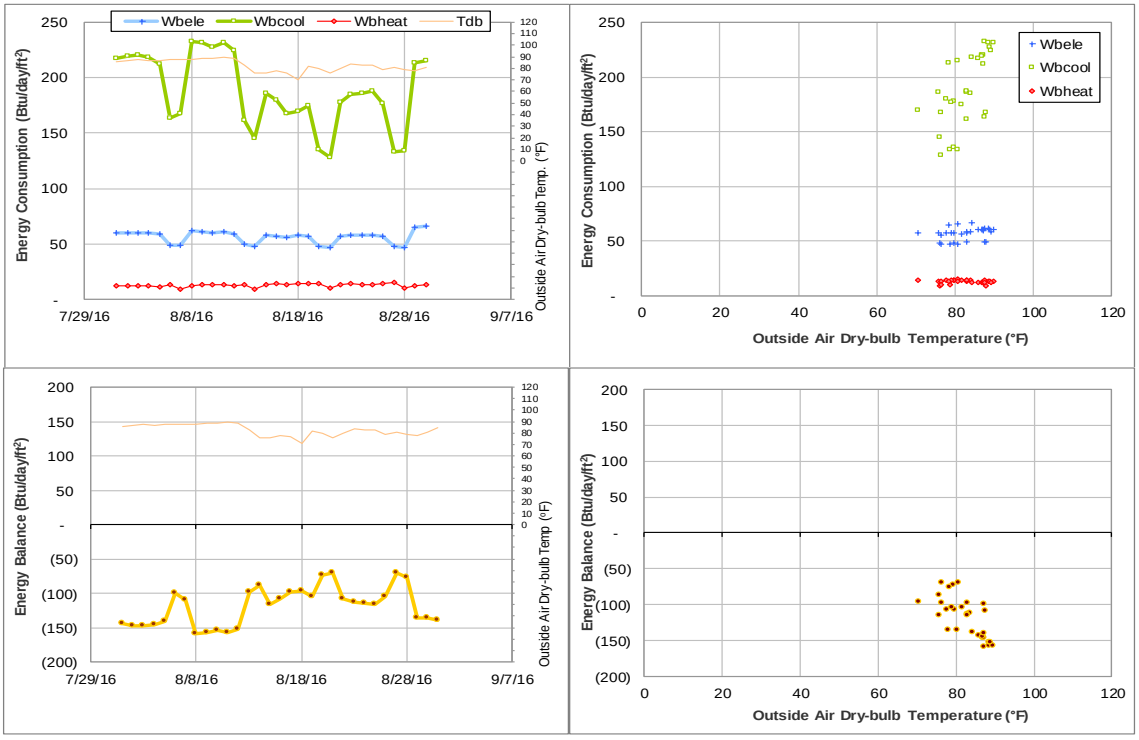


Figure IV-2 Liberal Arts and Arts & Humanities Building TAMU BLDG # 275 Energy Balance Plot during August 2016

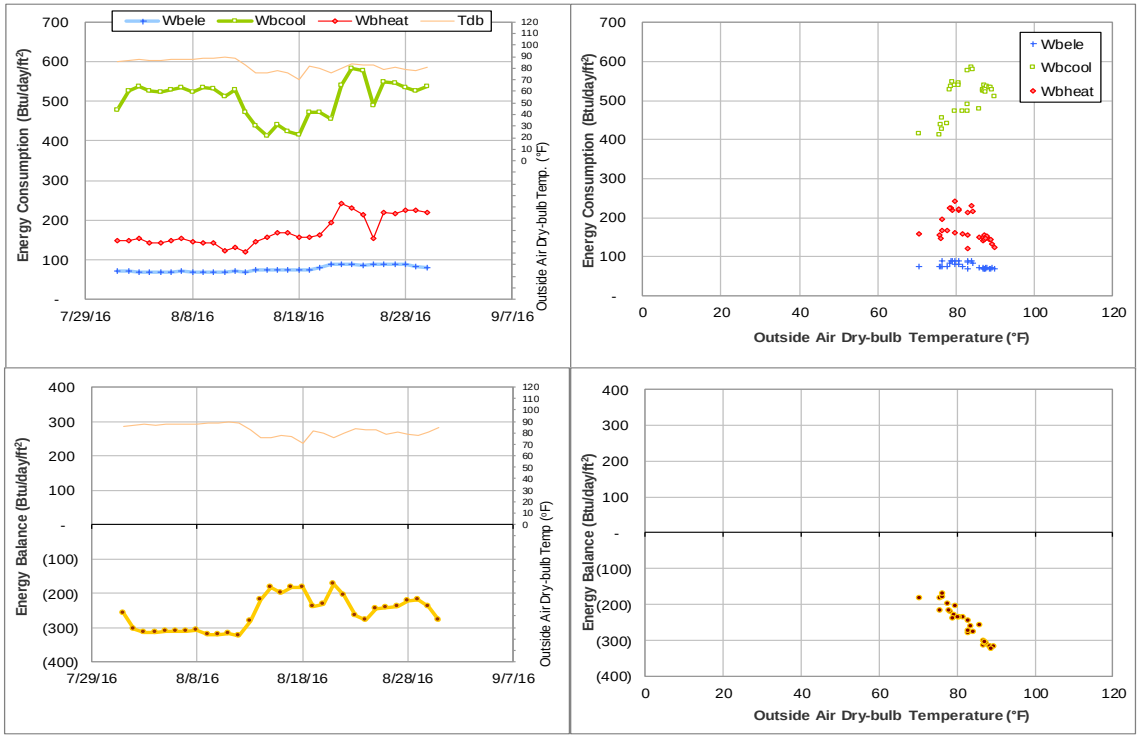


Figure IV-3 Wells Residence Hall TAMU BLDG # 290 Energy Balance Plot during August 2016

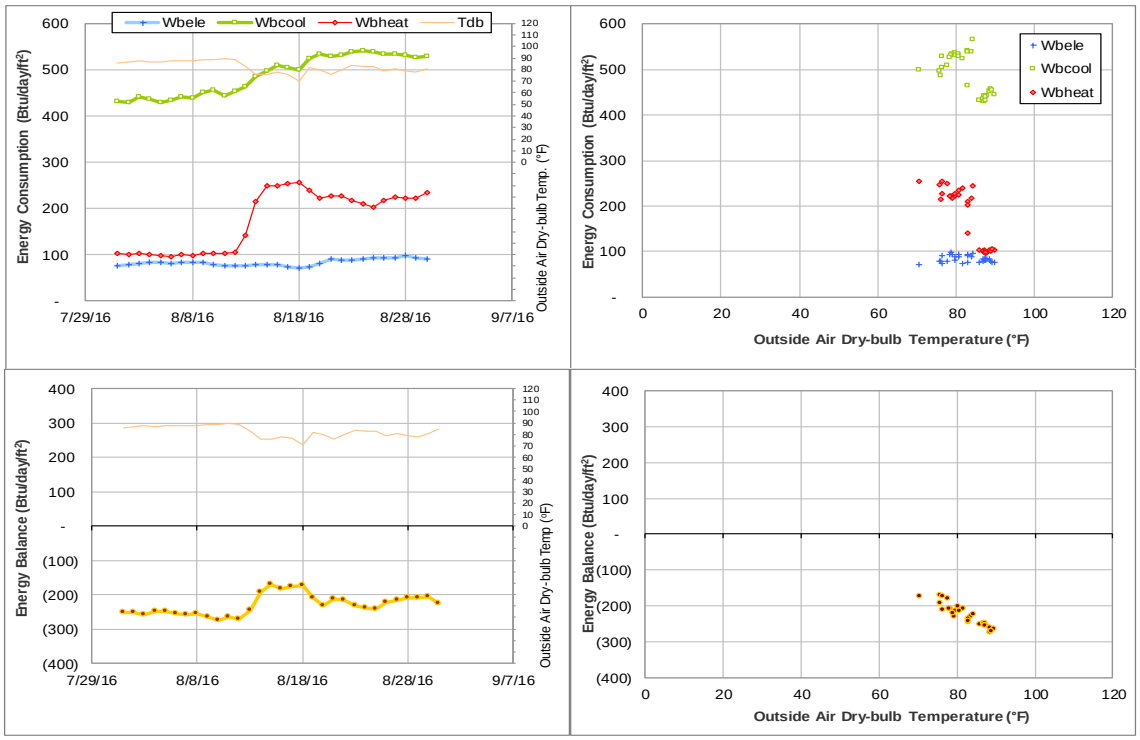


Figure IV-4 Rudder Residence Hall TAMU BLDG # 291 Energy Balance Plot during August 2016

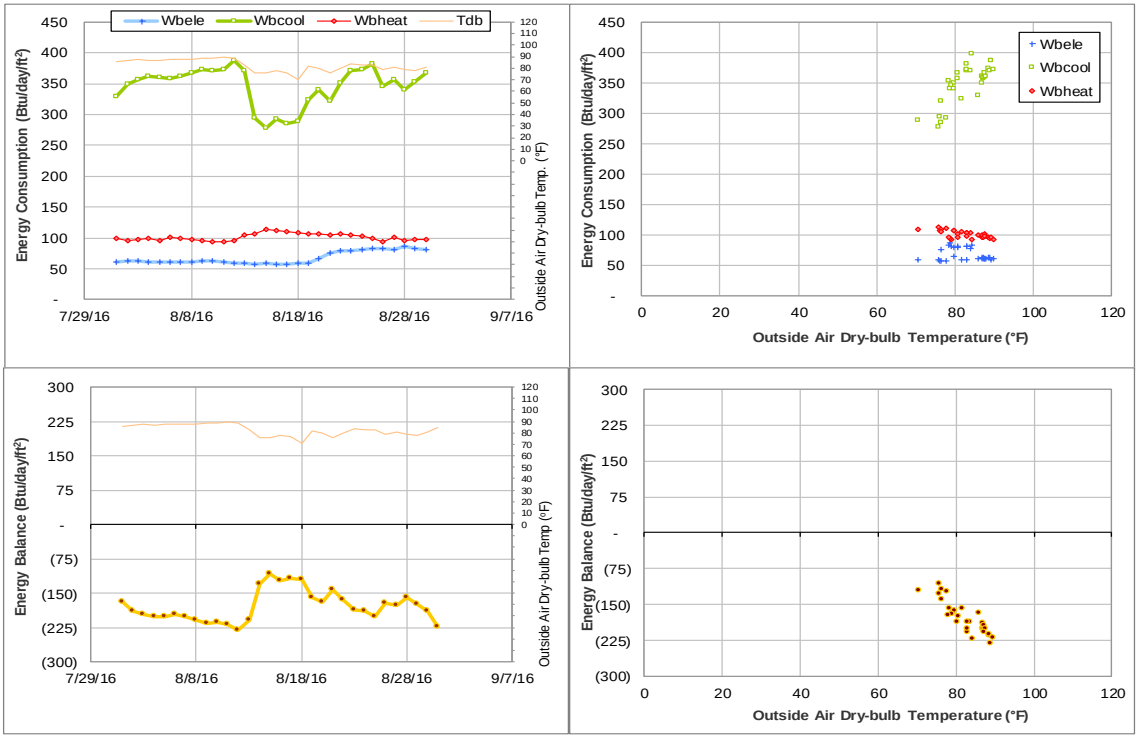


Figure IV-5 Eppright Residence Hall TAMU BLDG # 292 Energy Balance Plot during August 2016

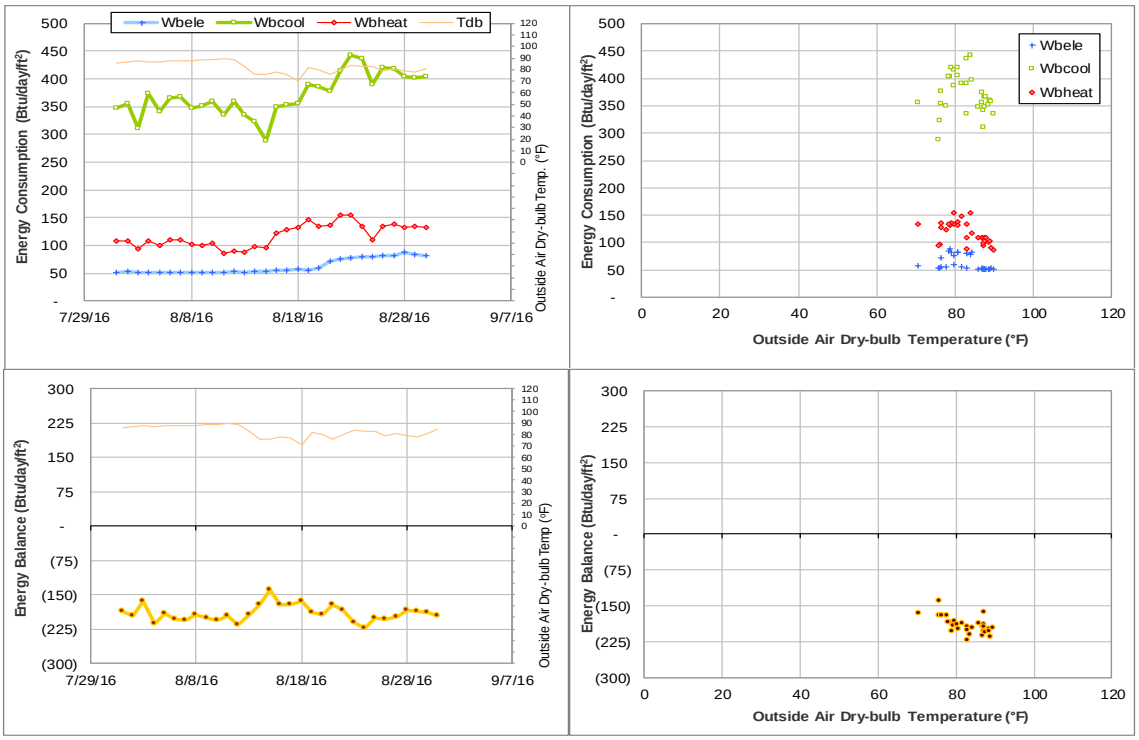


Figure IV-6 Appelt Residence Hall TAMU BLDG # 293 Energy Balance Plot during August 2016

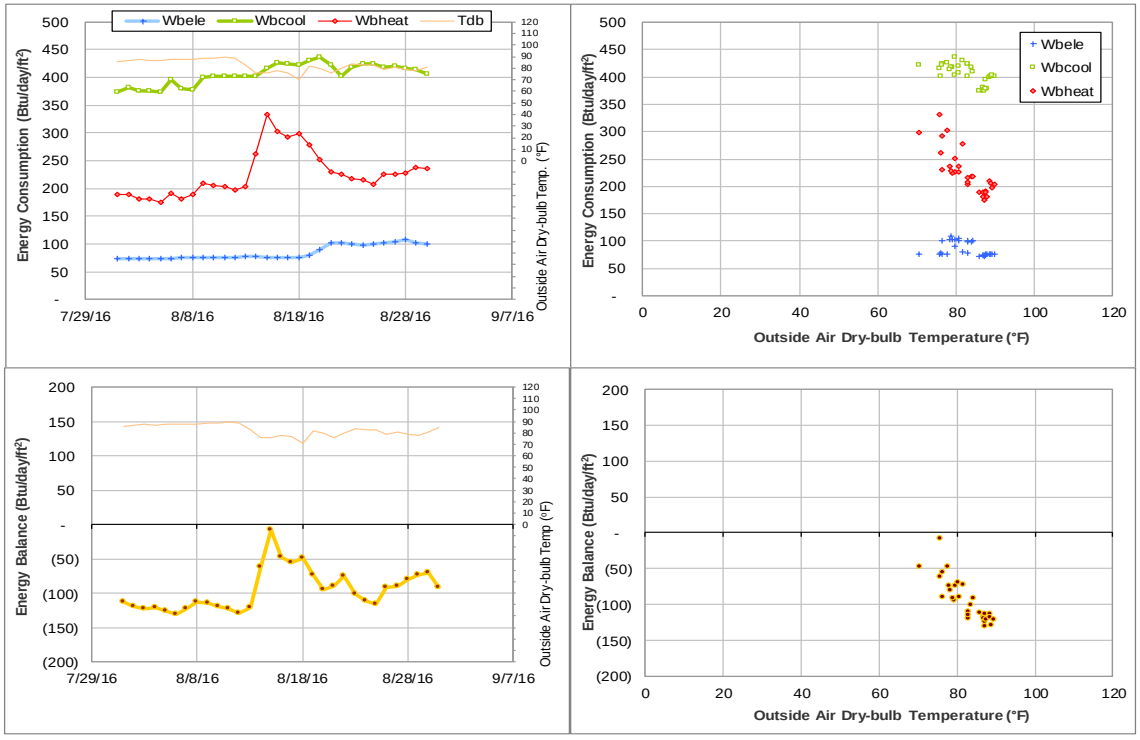


Figure IV-7 Lechner Residence Hall TAMU BLDG # 294 Energy Balance Plot during August 2016

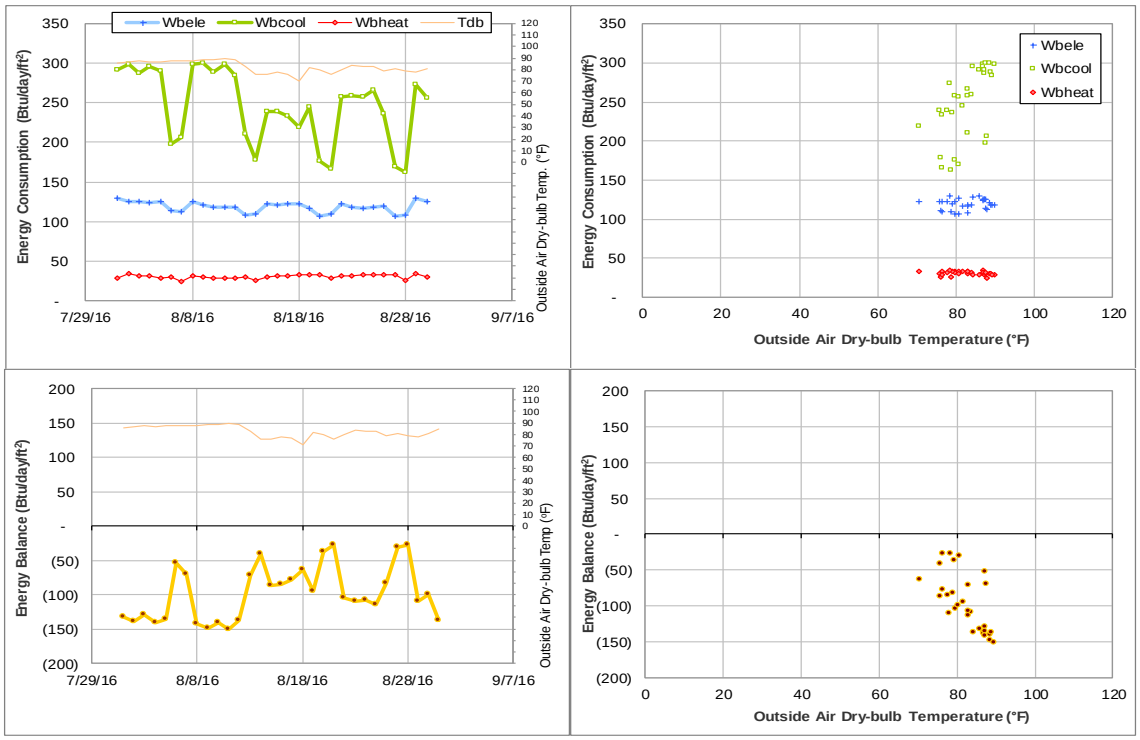


Figure IV-8 Mitchell Inst. for Fundamental Phys & Astronomy TAMU BLDG # 296 Energy Balance Plot during August 2016

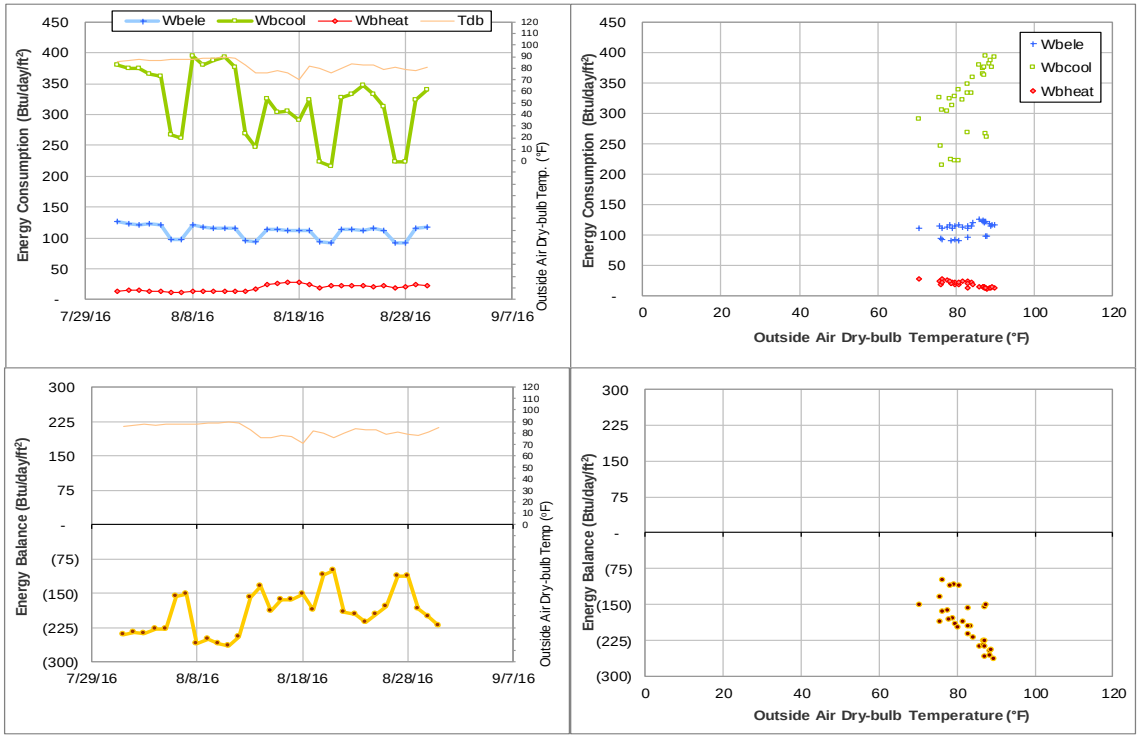


Figure IV-9 CE TTI Office & Lab Building TAMU BLDG # 325-385 Energy Balance Plot during August 2016

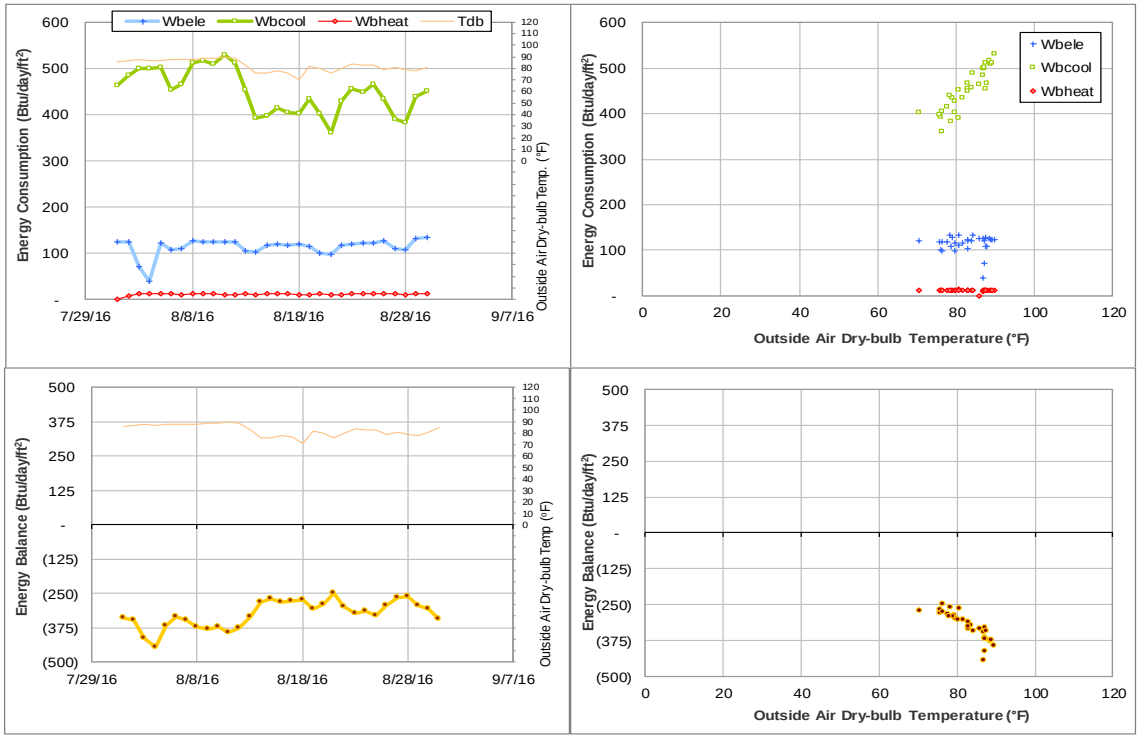


Figure IV-10 Bright Aerospace Building TAMU BLDG # 353 Energy Balance Plot during August 2016

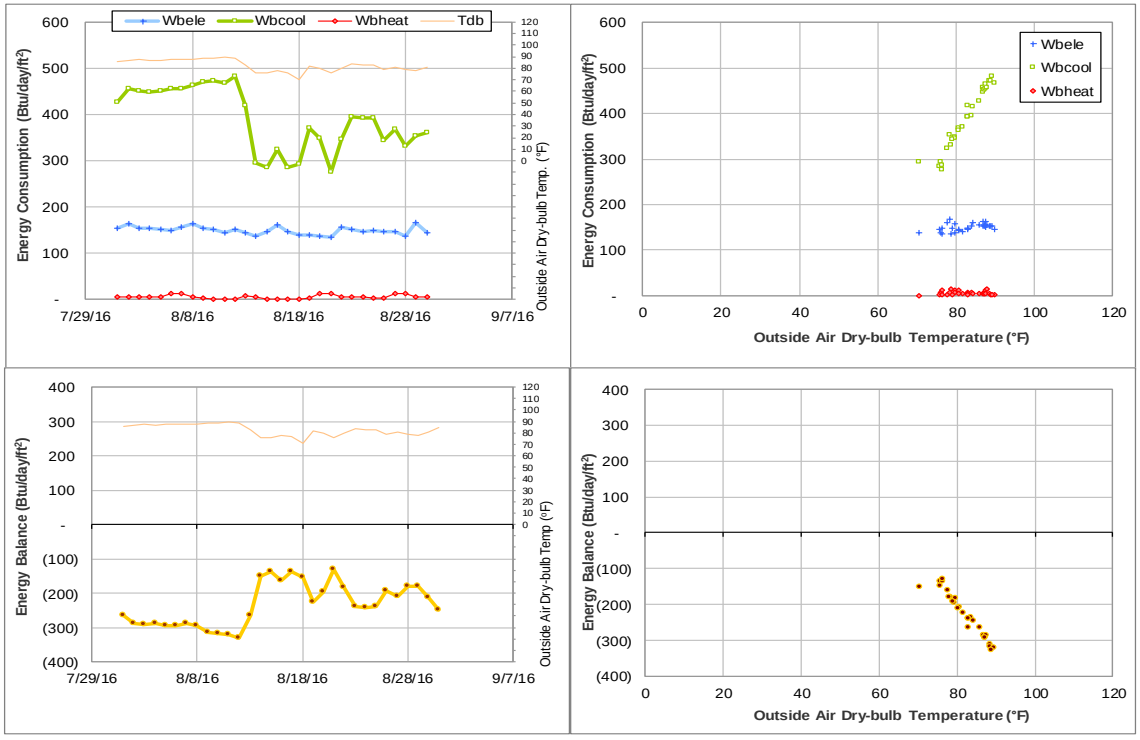


Figure IV-11 Davis Football Player Development Center TAMU BLDG # 358 Energy Balance Plot during August 2016

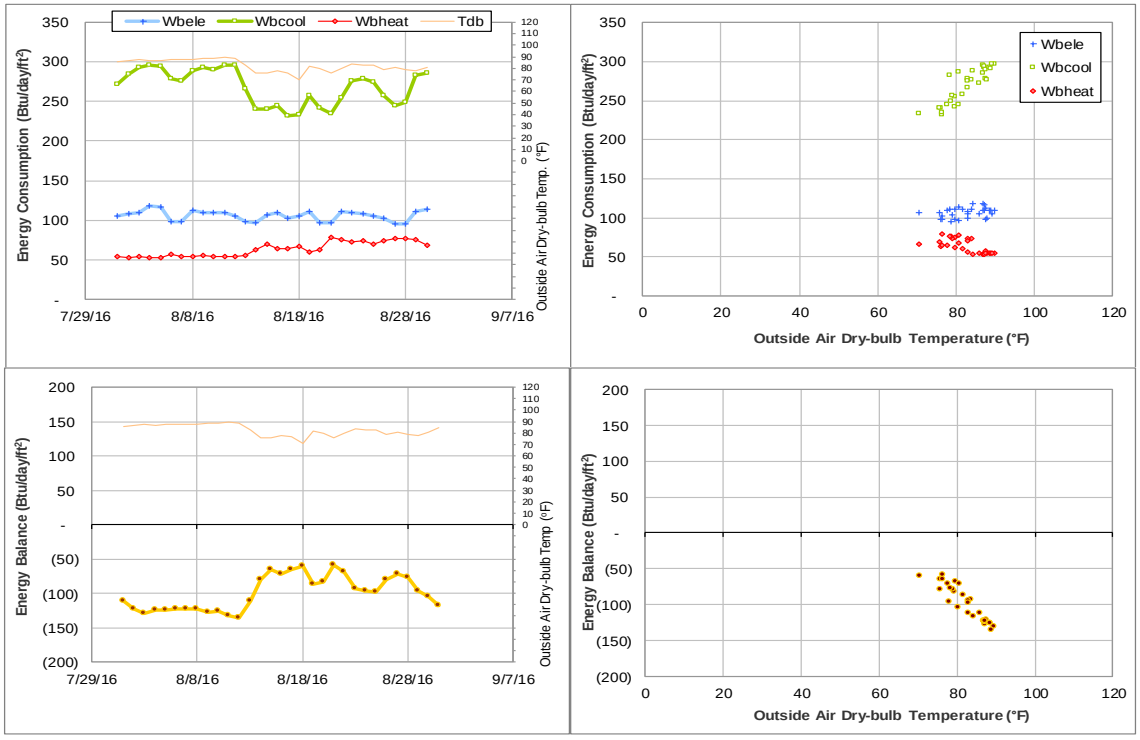


Figure IV-12 Architecture Building B&C TAMU BLDG # 359-432 Energy Balance Plot during August 2016

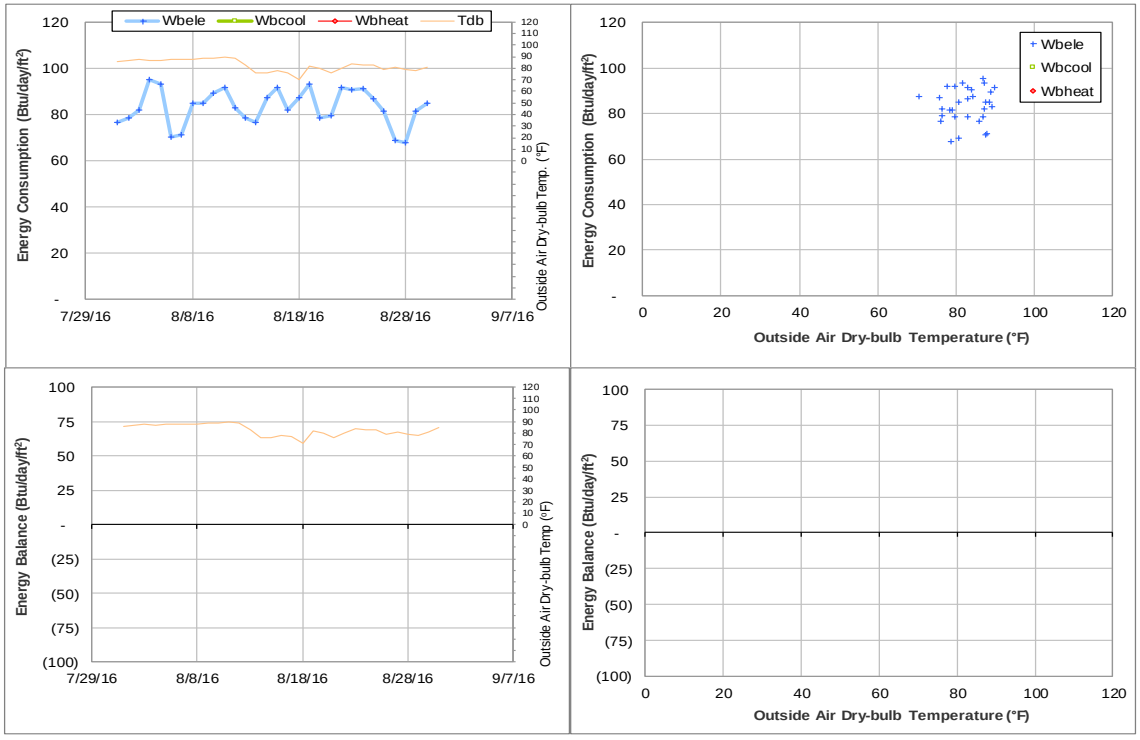


Figure IV-13 Architecture Building B TAMU BLDG # 359 Energy Balance Plot during August 2016

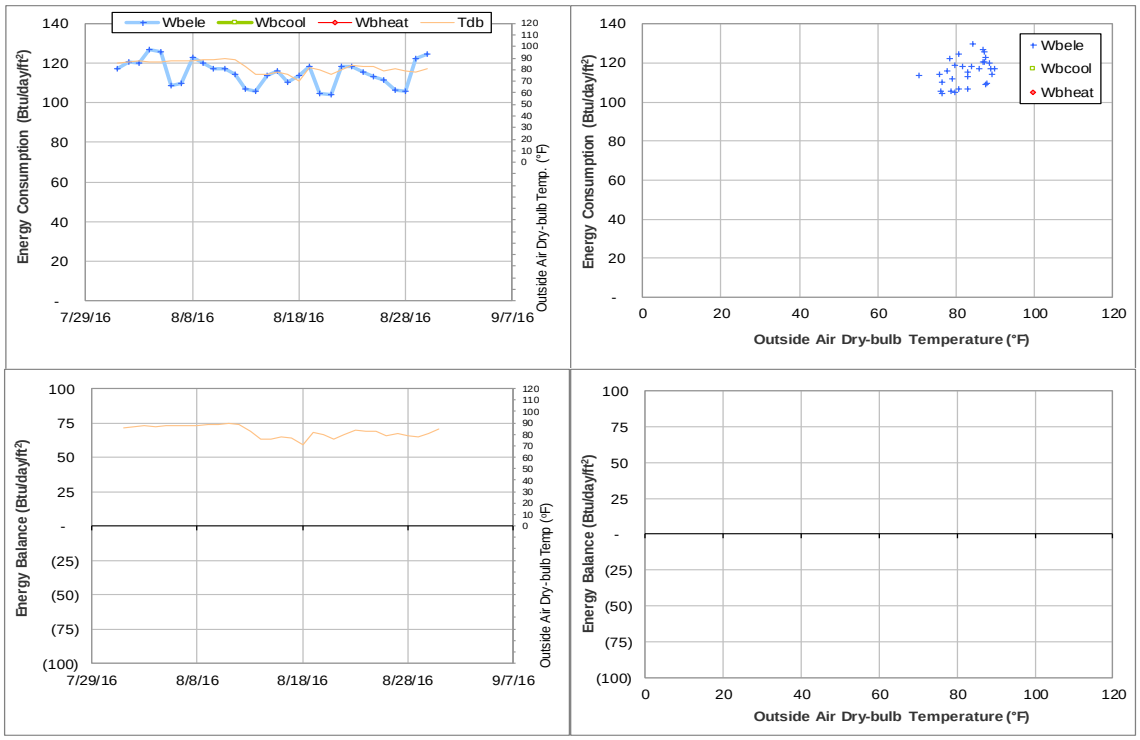


Figure IV-14 Architecture Building C TAMU BLDG # 432 Energy Balance Plot during August 2016

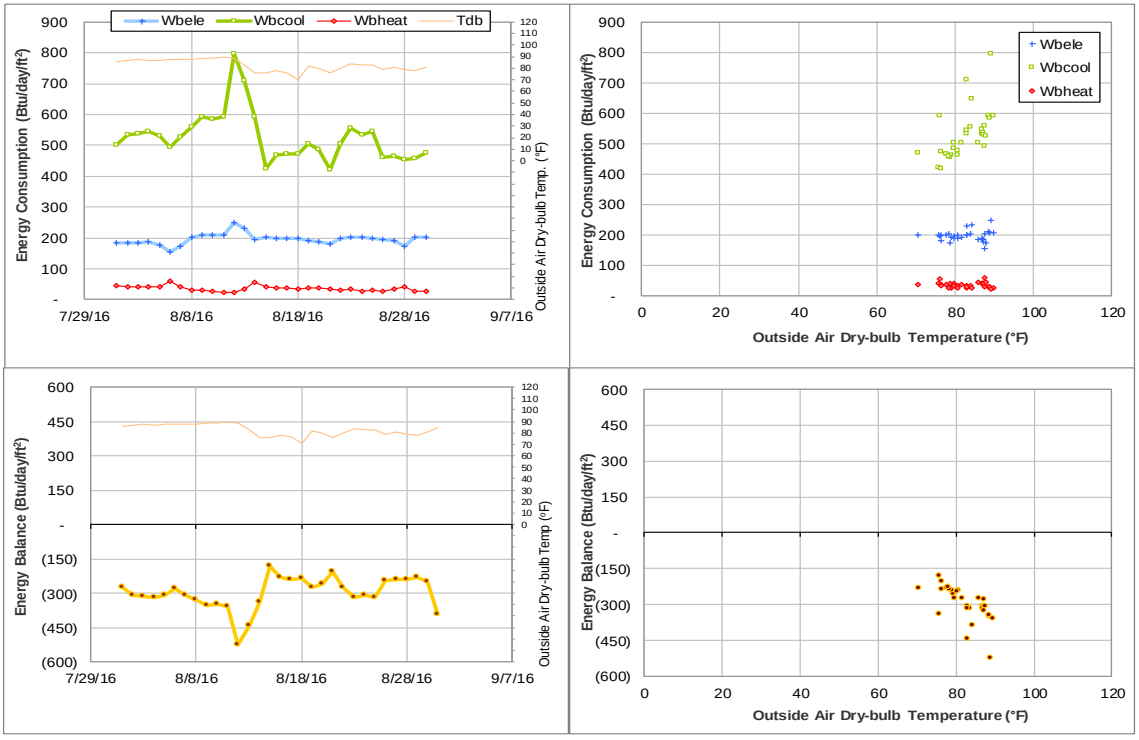


Figure IV-15 Bright Football Complex TAMU BLDG # 361 Energy Balance Plot during August 2016

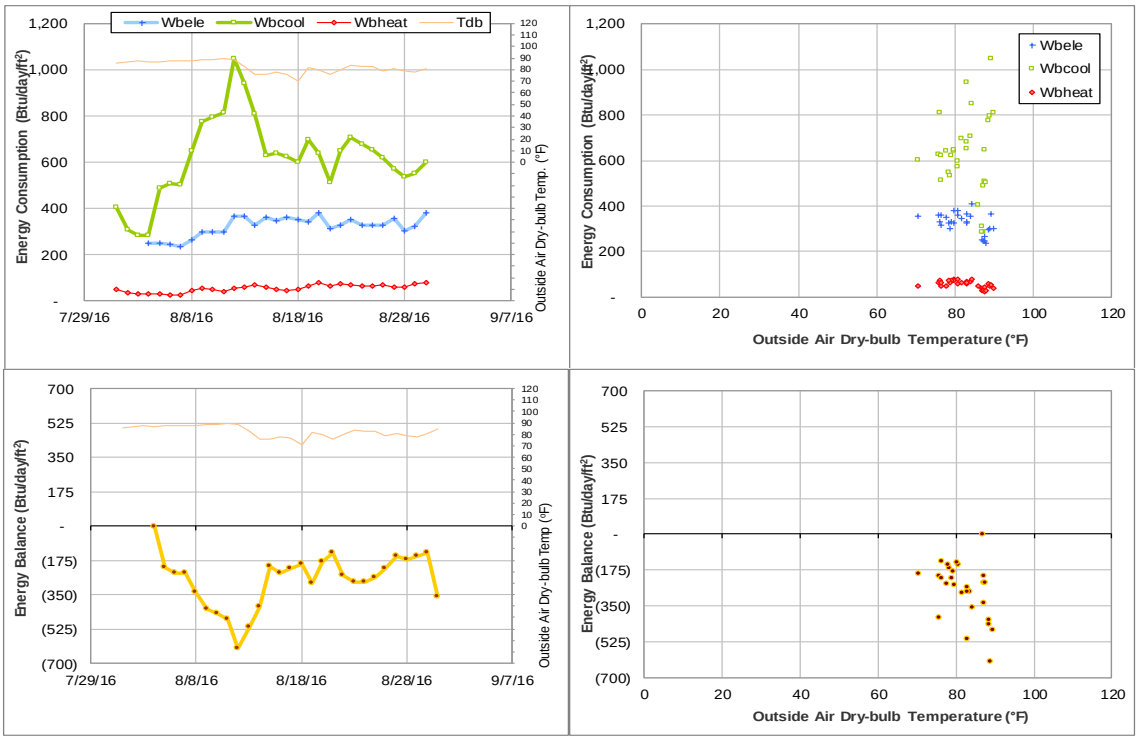


Figure IV-16 Kyle Field TAMU BLDG # 367 Energy Balance Plot during August 2016

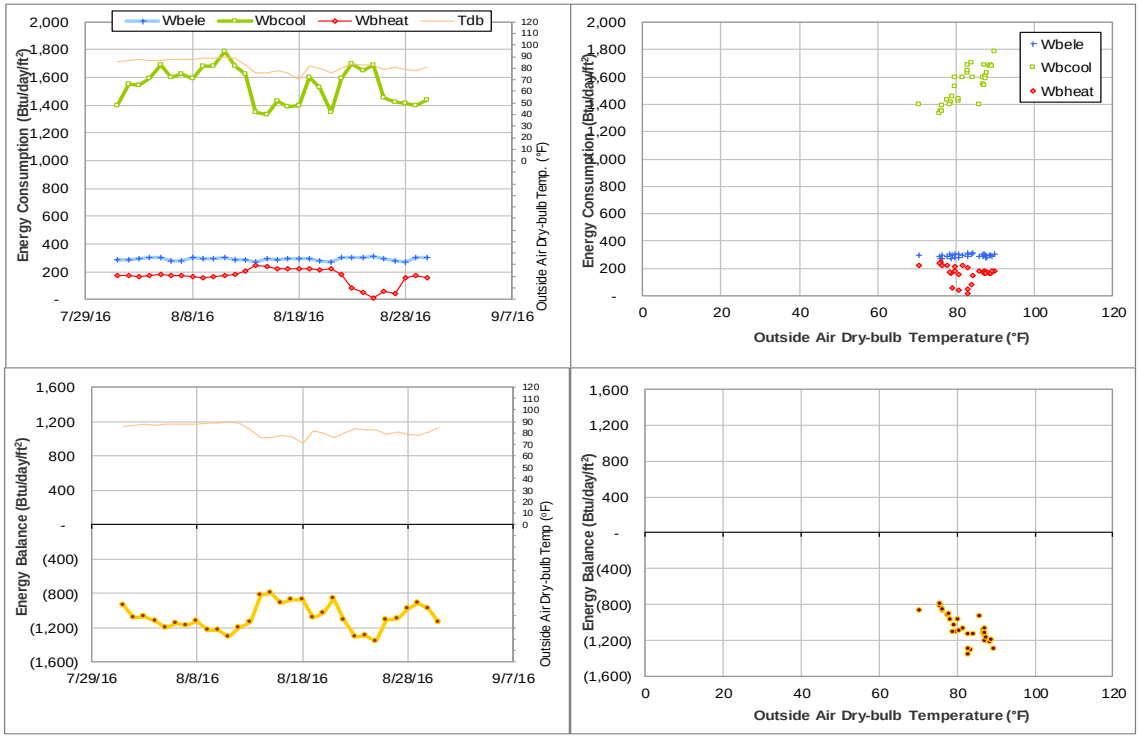


Figure IV-17 Chemistry Building Addition TAMU BLDG # 376 Energy Balance Plot during August 2016

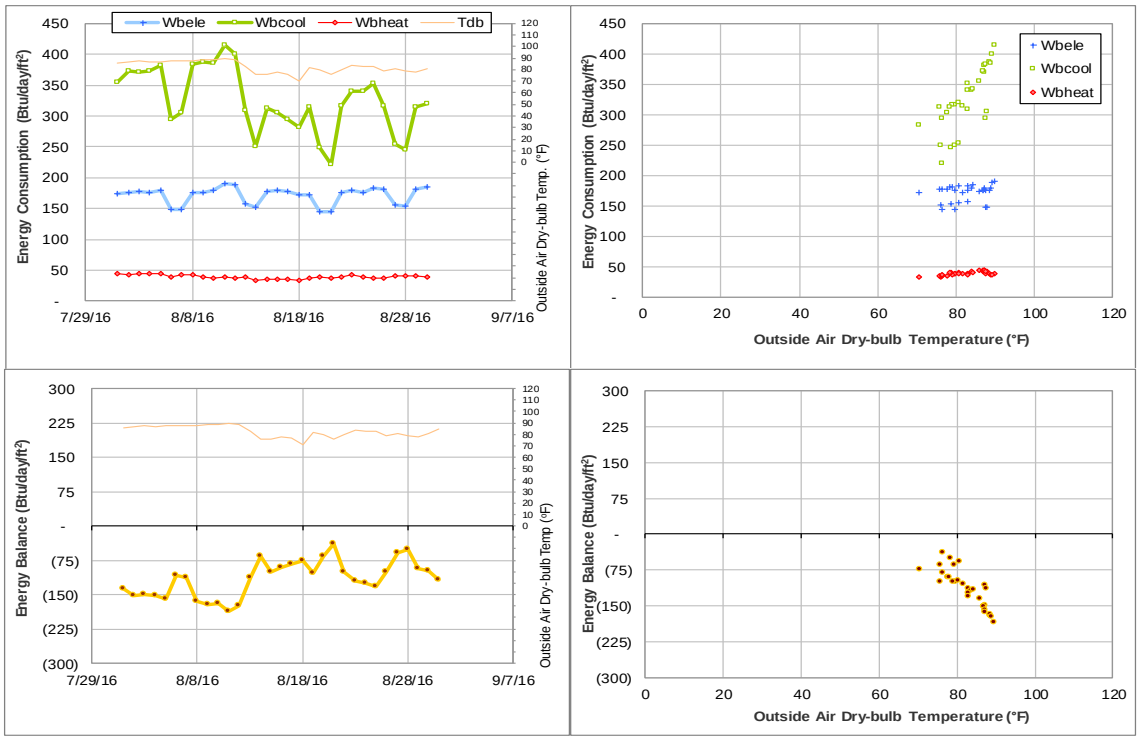


Figure IV-18 Koldus Building TAMU BLDG # 383 Energy Balance Plot during August 2016

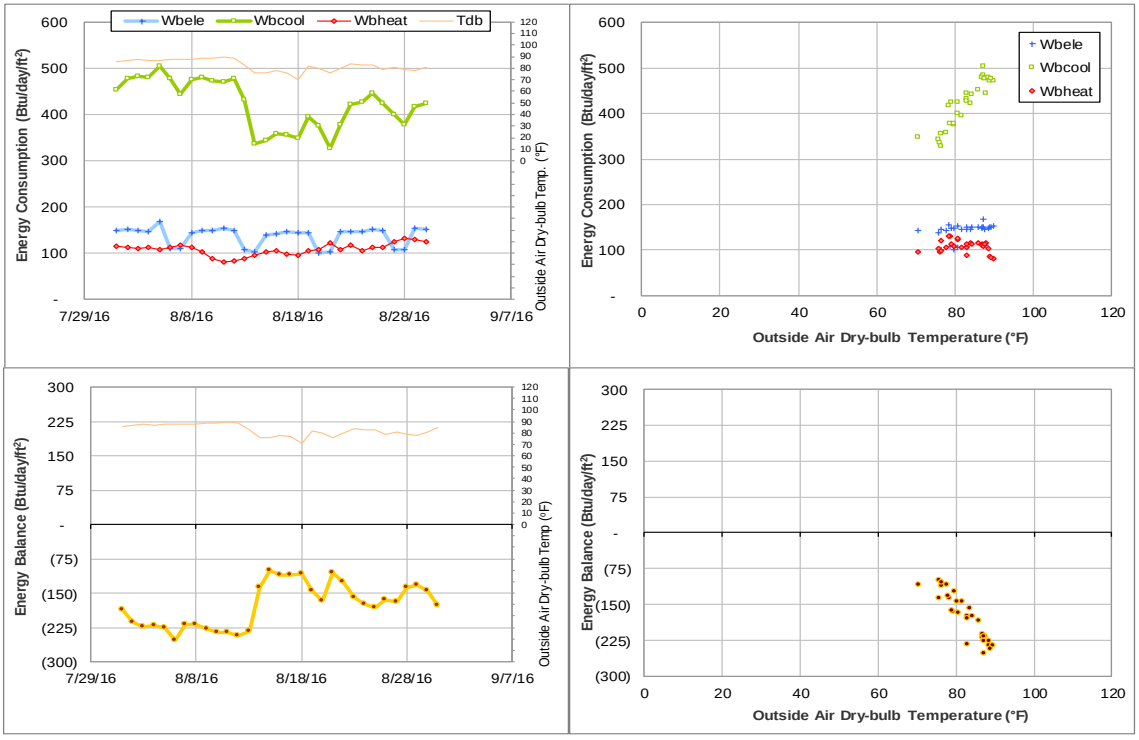


Figure IV-19 Sanders Corps of Cadets Center TAMU BLDG # 384 Energy Balance Plot during August 2016

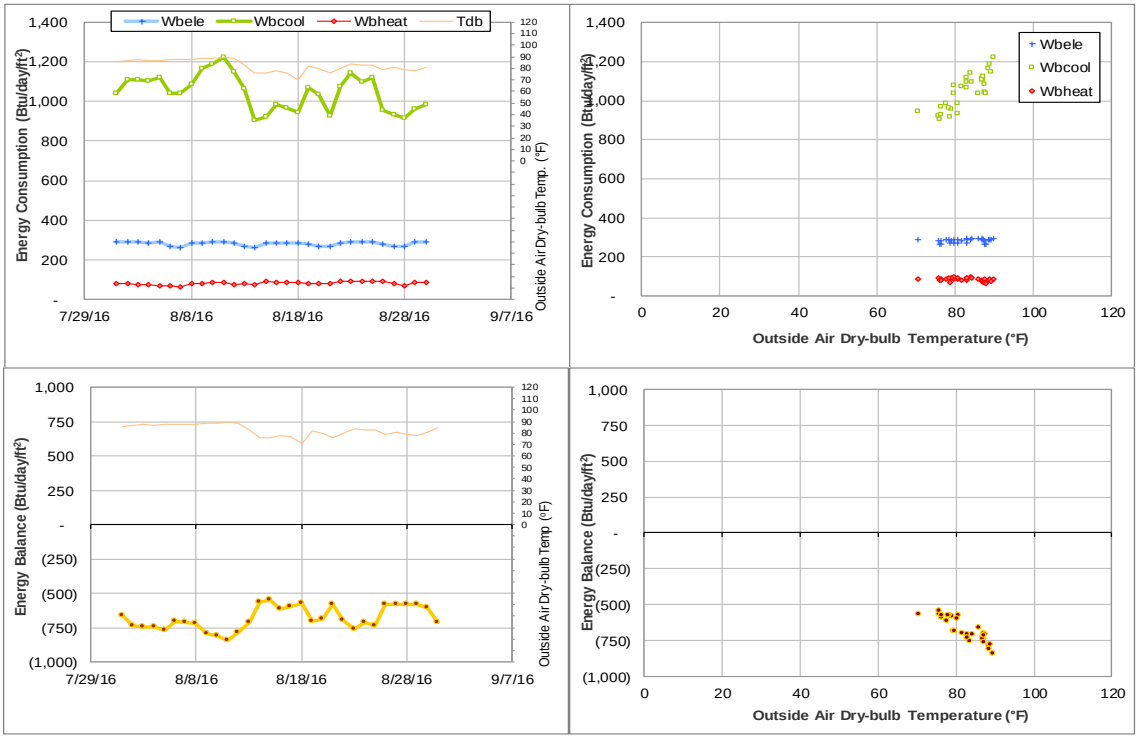


Figure IV-20 Jack E. Brown Chemical Engineering Building TAMU BLDG # 386 Energy Balance Plot during August 2016

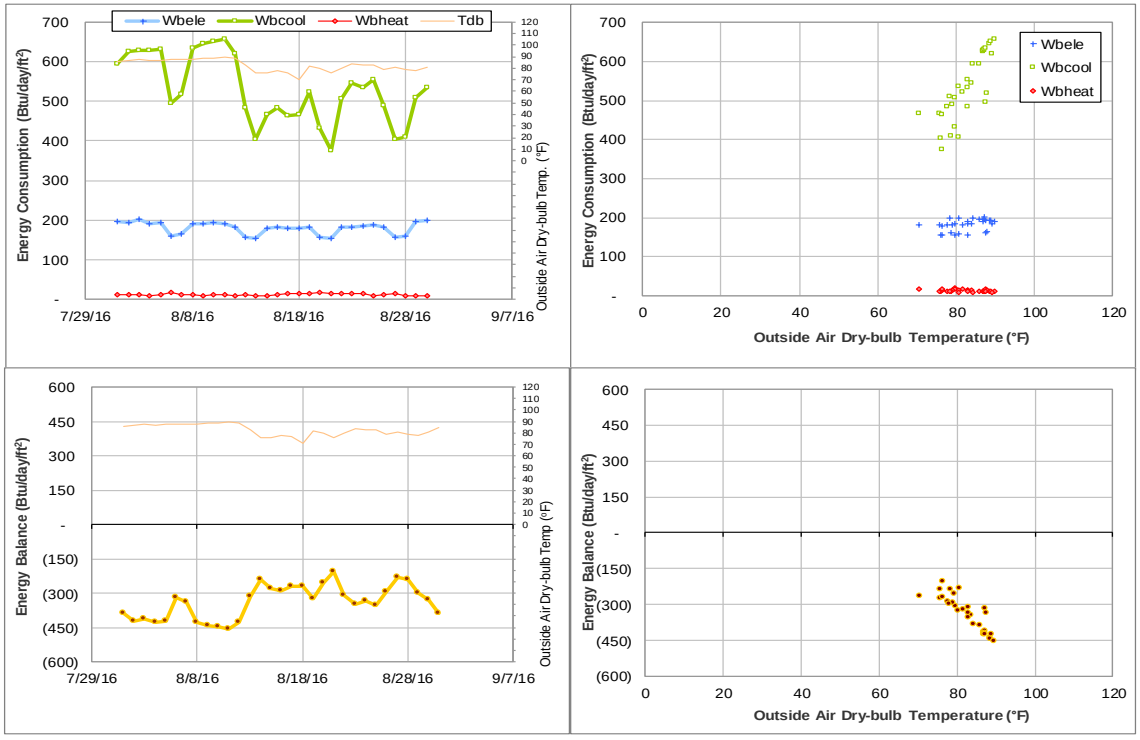


Figure IV-21 Richardson Petroleum Engineering Building TAMU BLDG # 387 Energy Balance Plot during August 2016

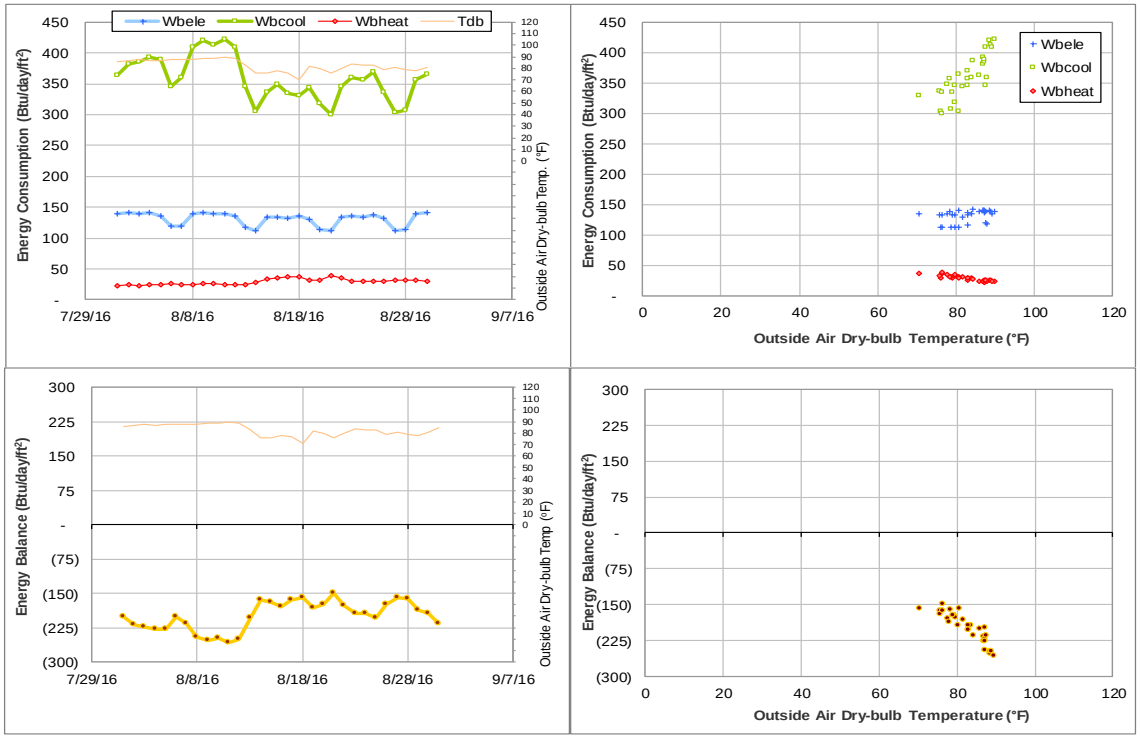


Figure IV-22 James J. Cain'51 and Mechanical Engineering Office Building TAMU BLDG # 391 Energy Balance Plot during August 2016

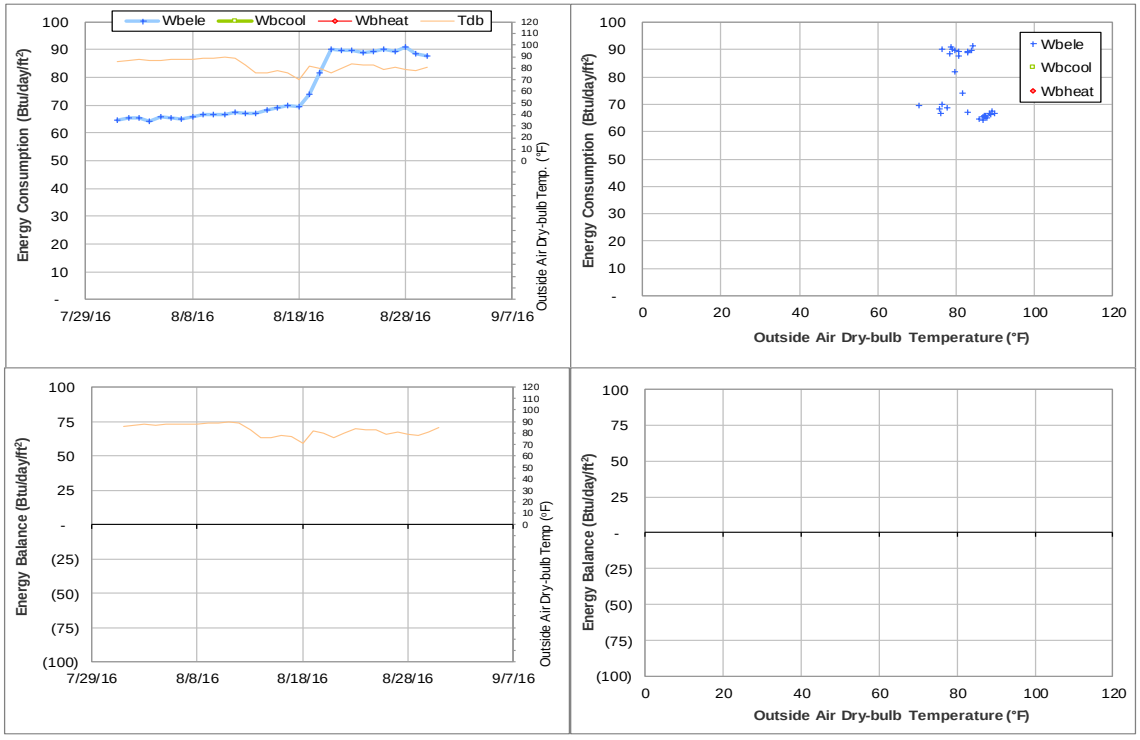


Figure IV-23 Underwood Residence Hall TAMU BLDG # 394 Energy Balance Plot during August 2016

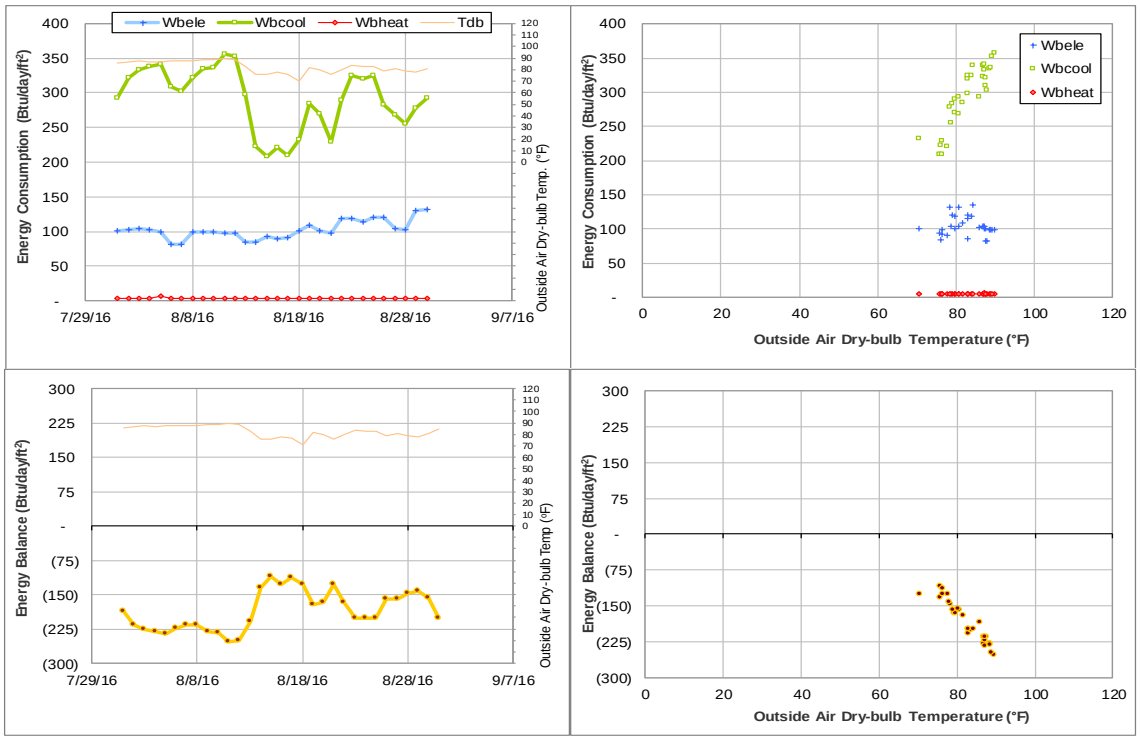


Figure IV-24 Langford Architecture Center Building A TAMU BLDG # 398 Energy Balance Plot during August 2016

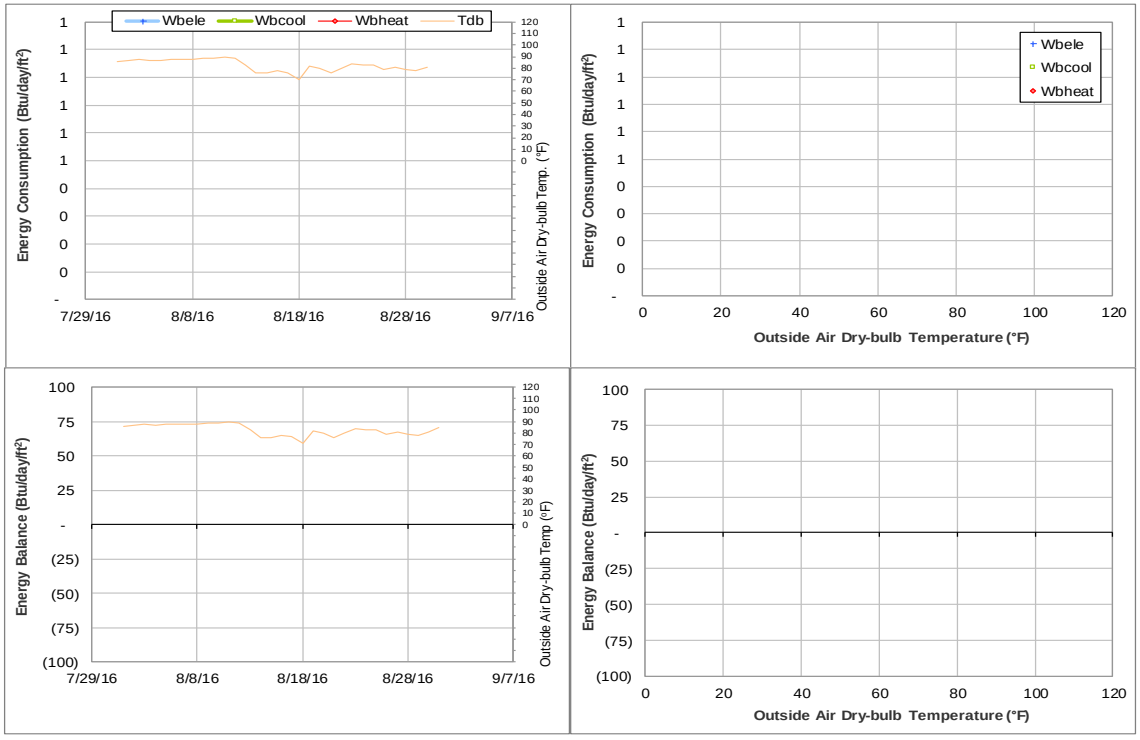


Figure IV-25 Spence Hall, Briggs Hall, and Ash II LLC TAMU BLDG # 400-402-1405 Energy Balance Plot during August 2016

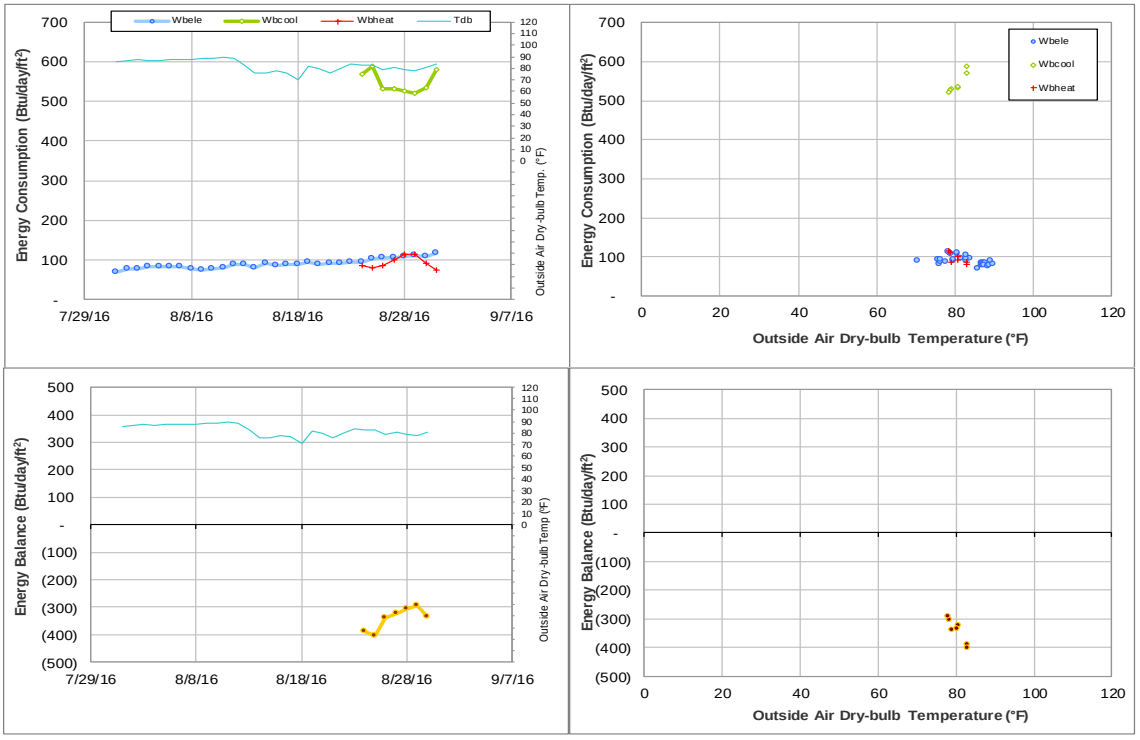


Figure IV-26 Spence Hall Dorm 1 TAMU BLDG # 400 Energy Balance Plot during August 2016

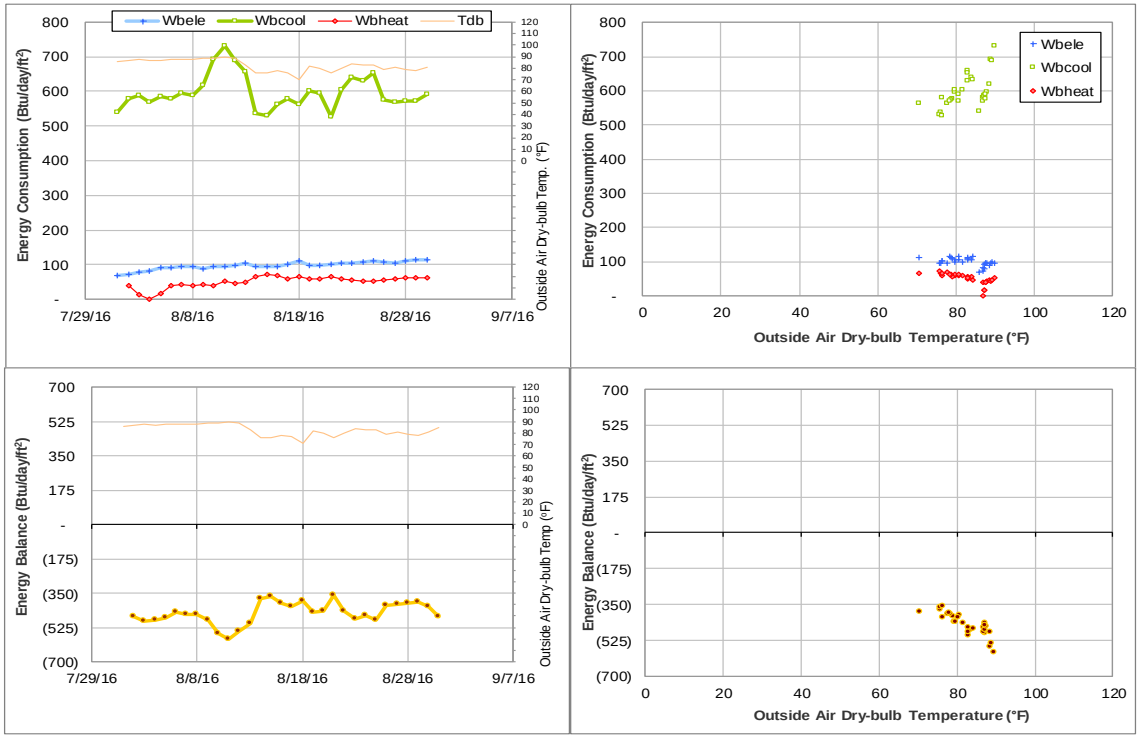


Figure IV-27 Briggs Hall Dorm 3 TAMU BLDG # 402 Energy Balance Plot during August 2016

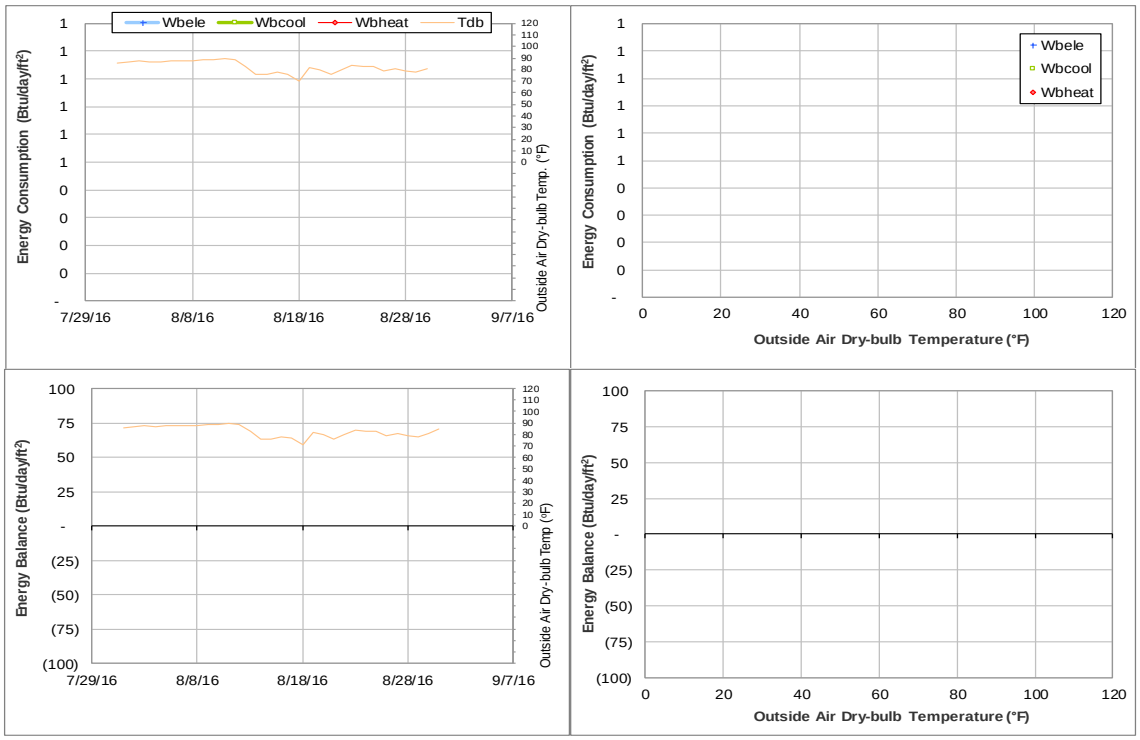


Figure IV-28 Ash II LLC TAMU BLDG # 1405 Energy Balance Plot during August 2016

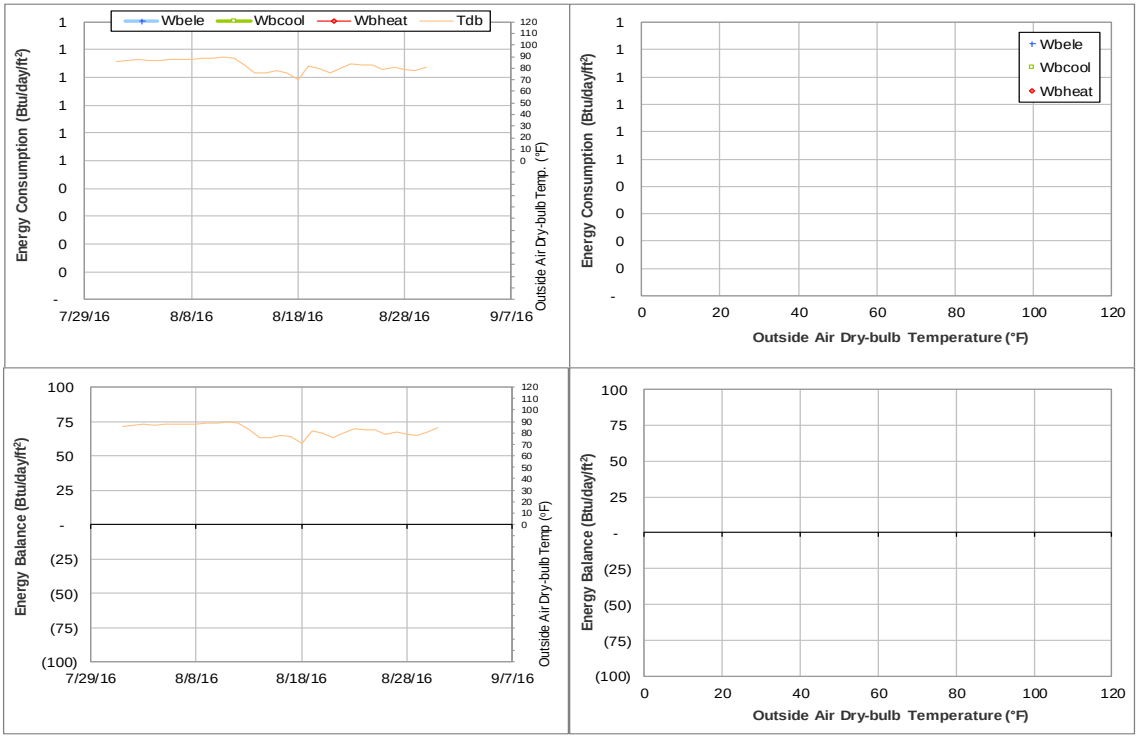


Figure IV-29 Kiest Hall, Fountain Hall, and Plank LLC TAMU BLDG # 401-403-1404 Energy Balance Plot during August 2016

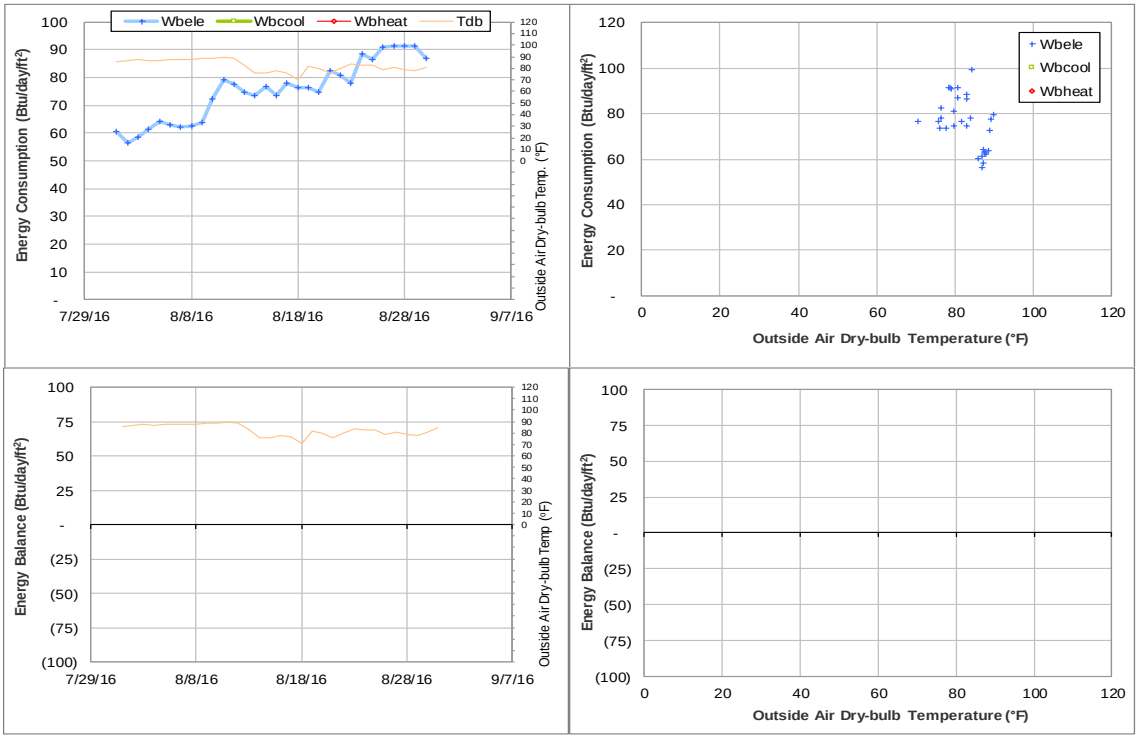


Figure IV-30 Kiest Hall Dorm 2 TAMU BLDG # 401 Energy Balance Plot during August 2016

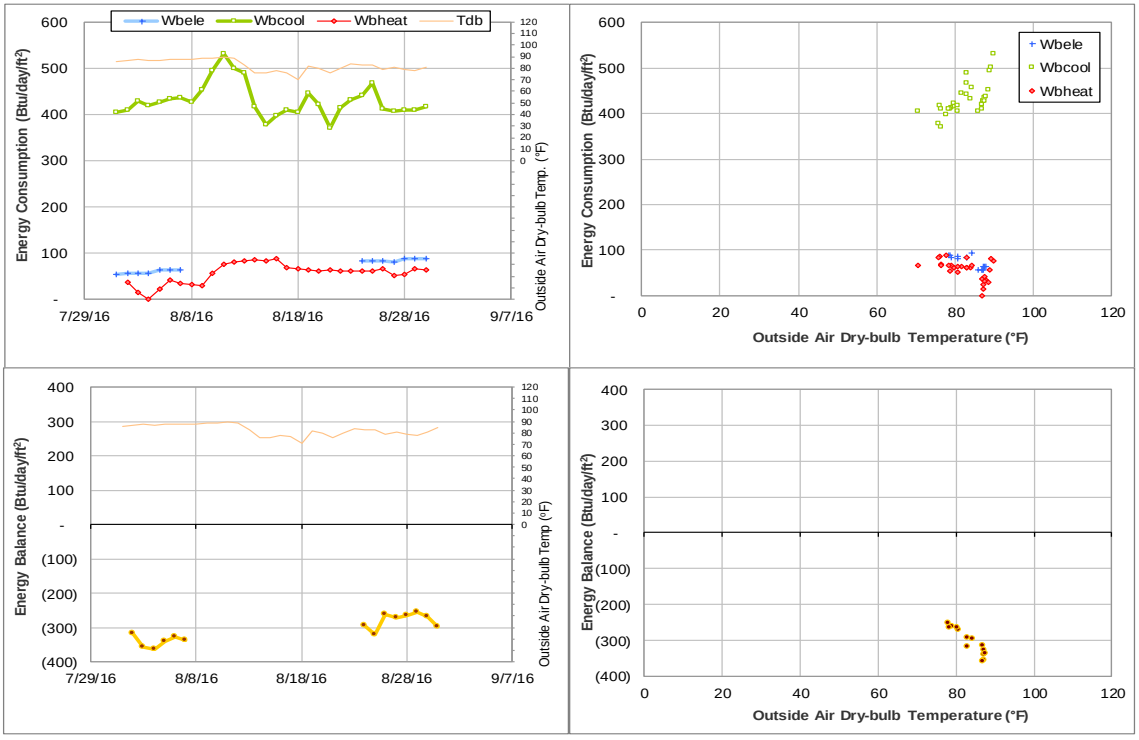


Figure IV-31 Fountain Hall Dorm 4 TAMU BLDG # 403 Energy Balance Plot during August 2016

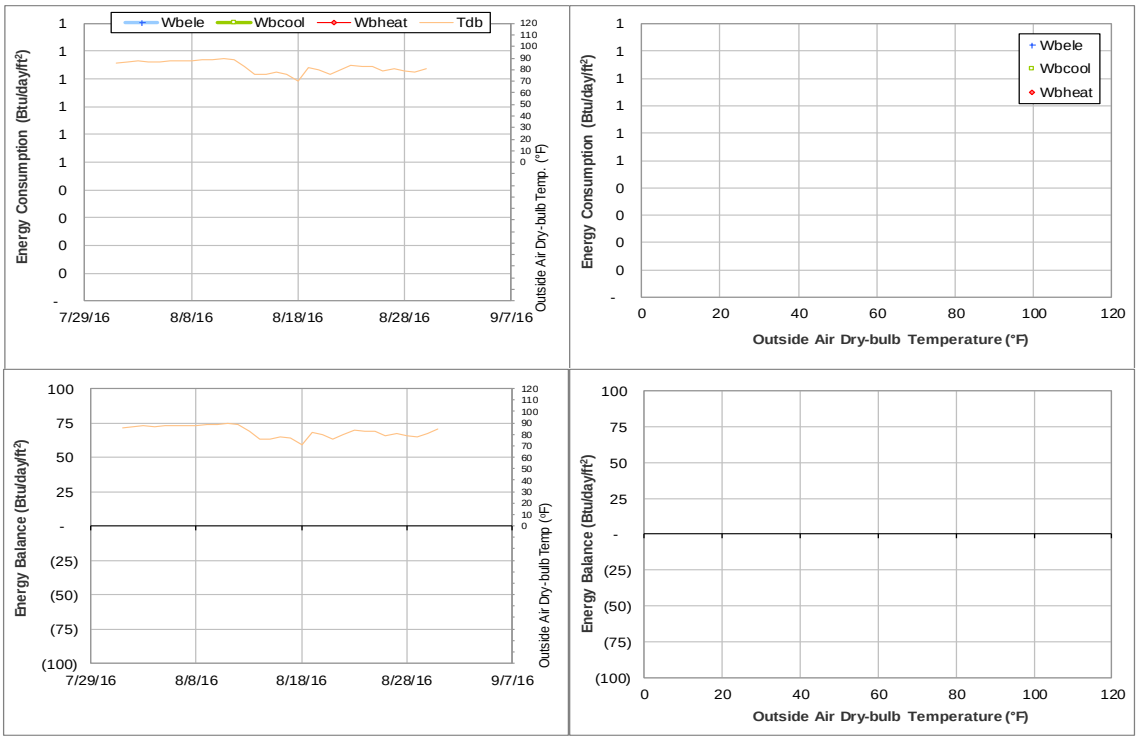


Figure IV-32 Plank LLC TAMU BLDG # 1404 Energy Balance Plot during August 2016

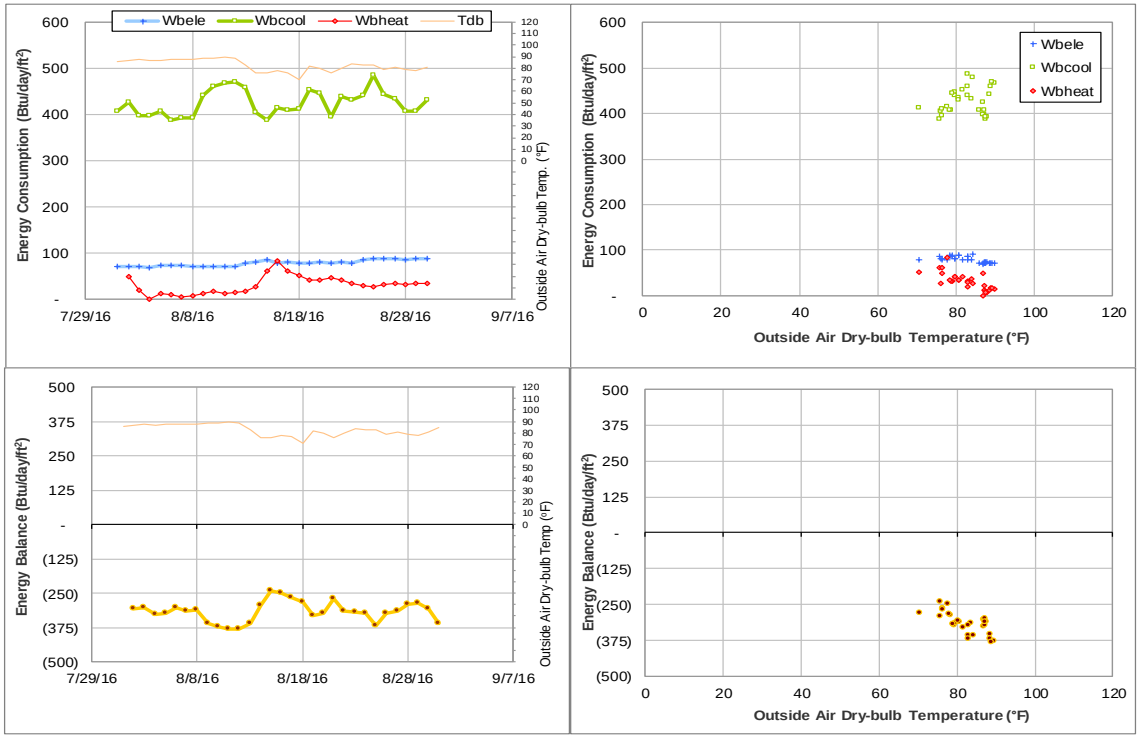


Figure IV-33 Gainer Hall, Leonard Hall and Ash LLC TAMU BLDG # 404-406-1403 Energy Balance Plot during August 2016

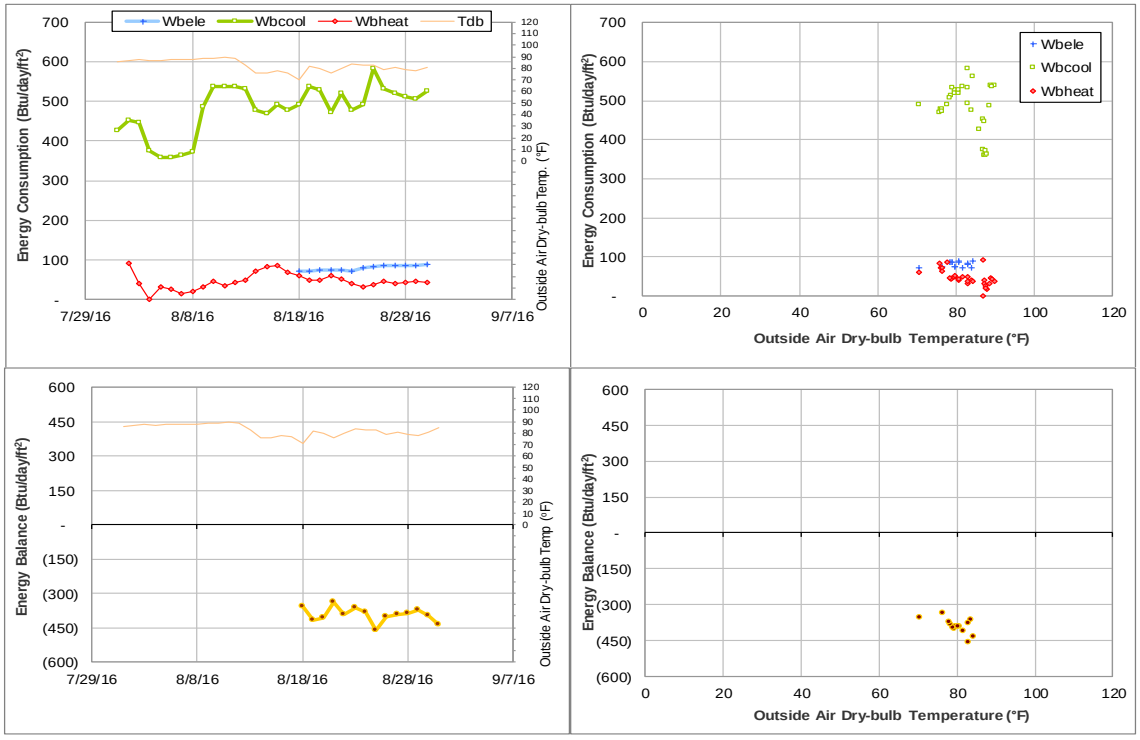


Figure IV-34 Gainer Hall Dorm 5 TAMU BLDG # 404 Energy Balance Plot during August 2016

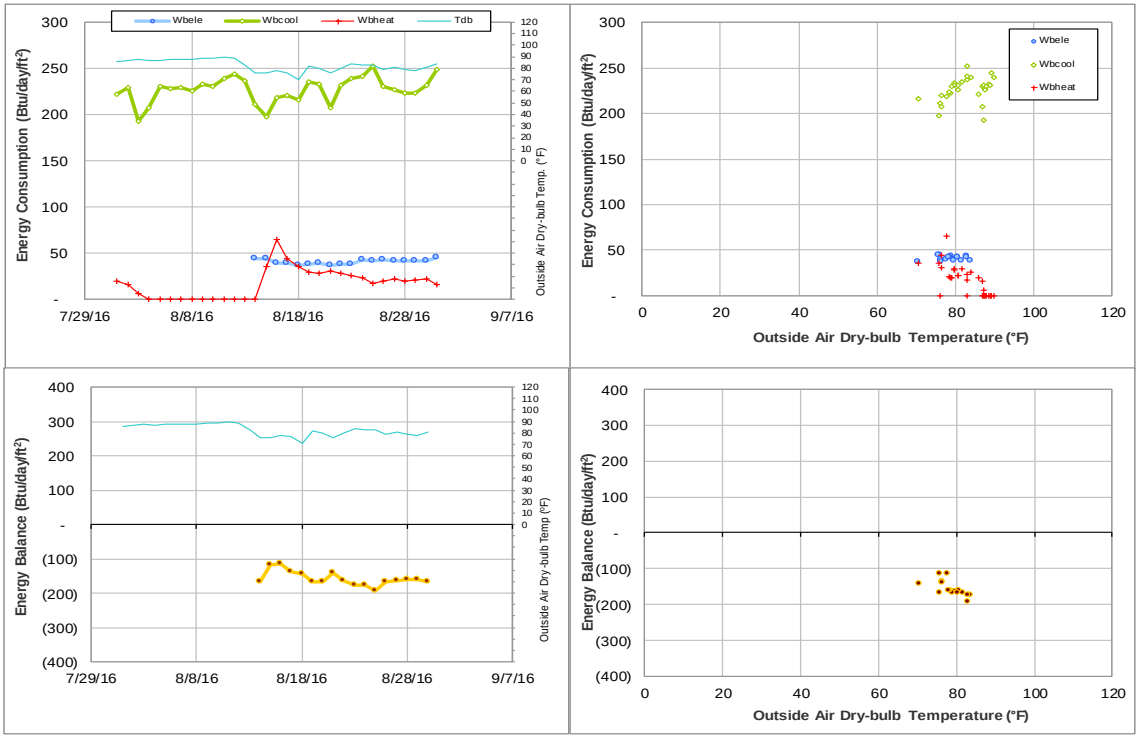

Wbele
Wbcool
Wbheat
Tdb
Energy Consumption (Btu/day/ft²)
Outside Air Dry-bulb Temp. (°F)
7/29/16
8/8/16
8/18/16
8/28/16
9/7/16
Energy Balance (Btu/day/ft²)
Outside Air Dry-bulb Temperature (°F)

Figure IV-35 Leonard Hall - Dorm 7 TAMU BLDG # 406 Energy Balance Plot during August 2016

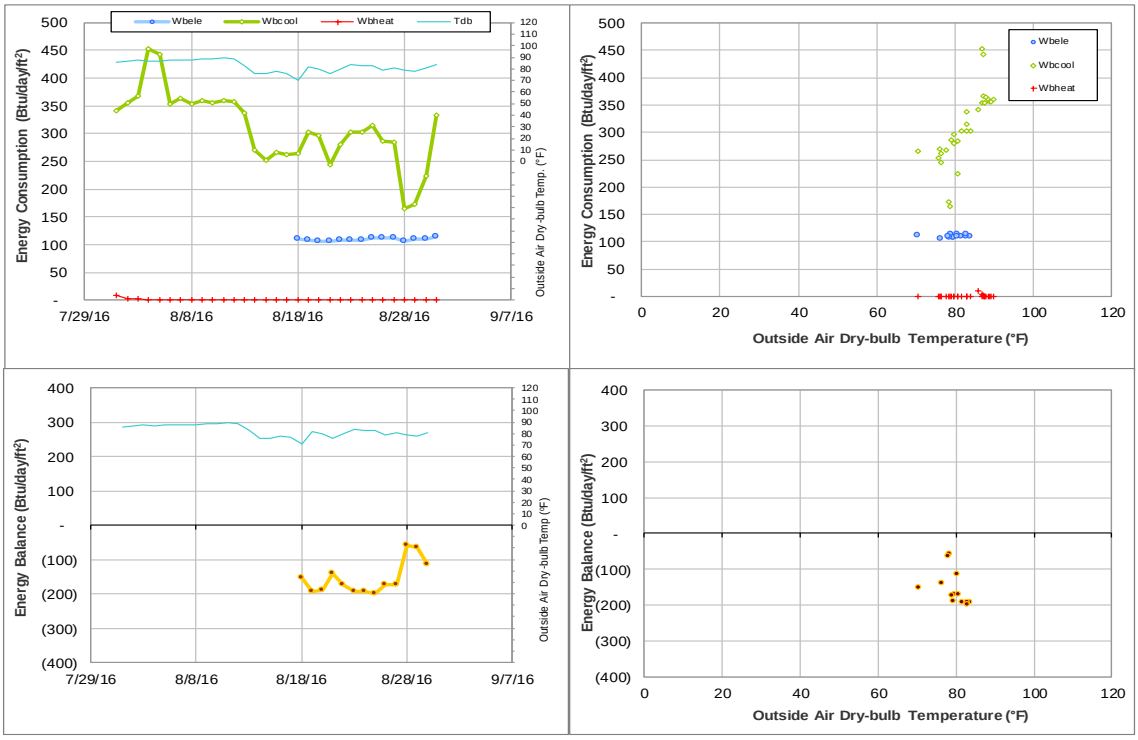


Figure IV-36 H. Grady Ash, Jr. '58 Leadership Learning Center TAMU BLDG # 1403 Energy Balance Plot during August 2016

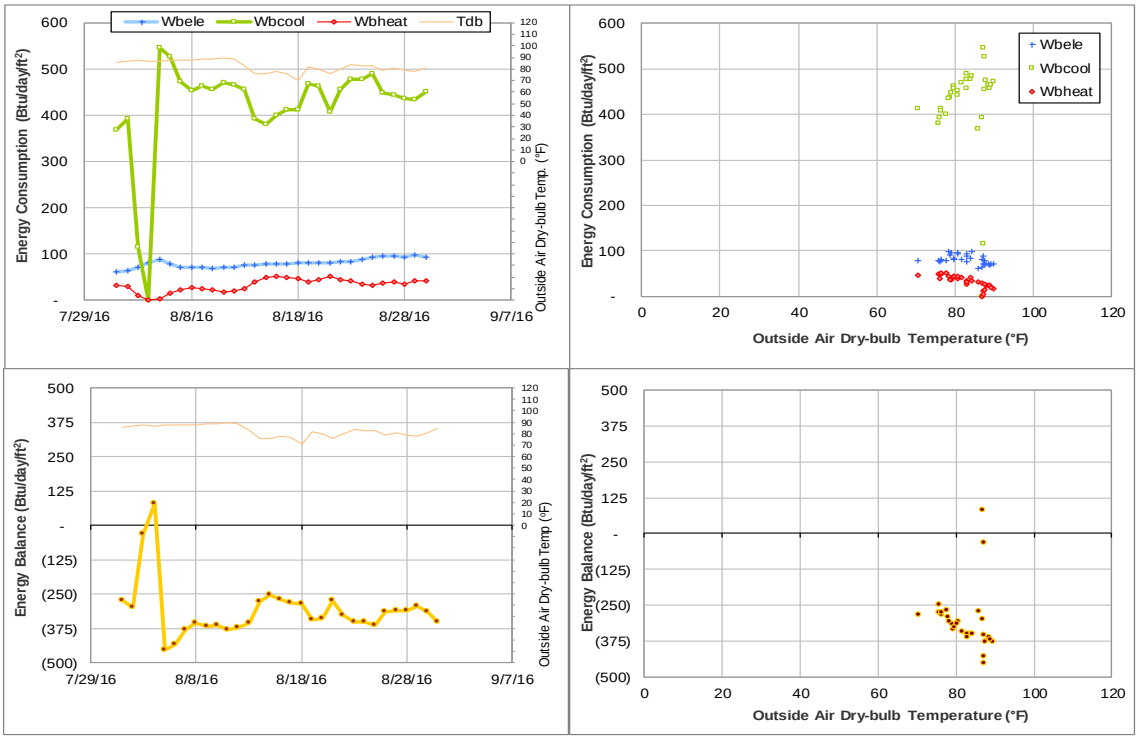


Figure IV-37 Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center TAMU BLDG # 405-407-1402 Energy Balance Plot during August 2016

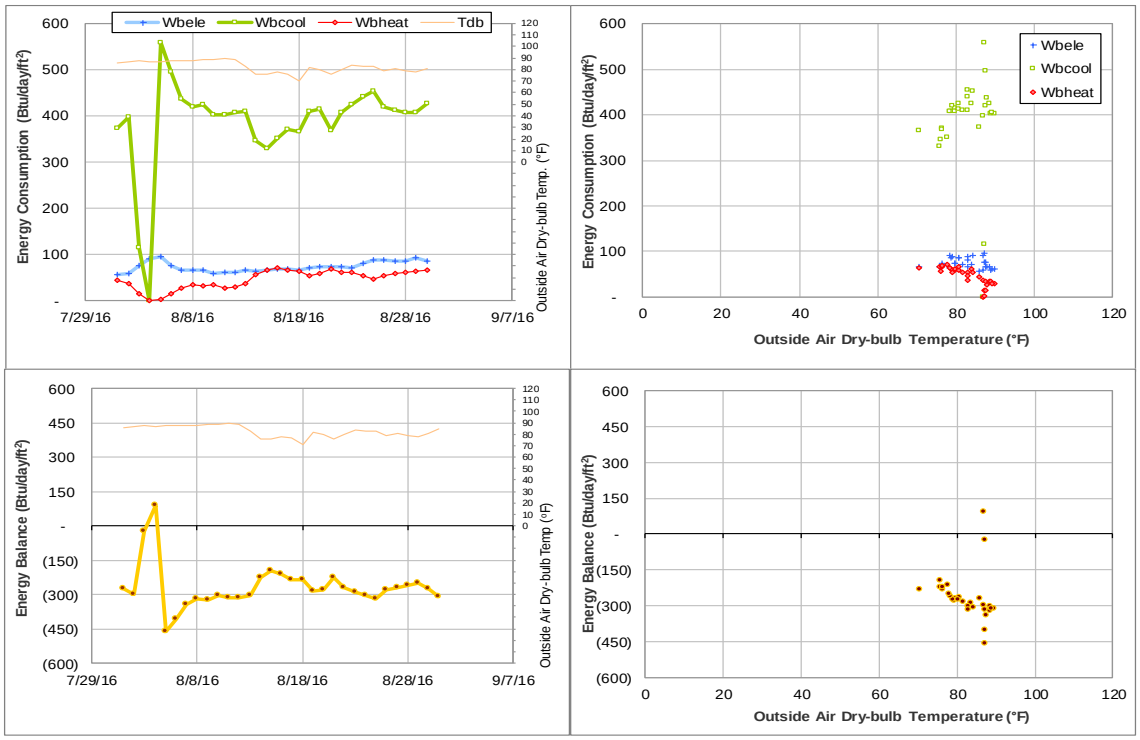


Figure IV-38 Lacy Hall - Dorm 6 TAMU BLDG # 405 Energy Balance Plot during August 2016

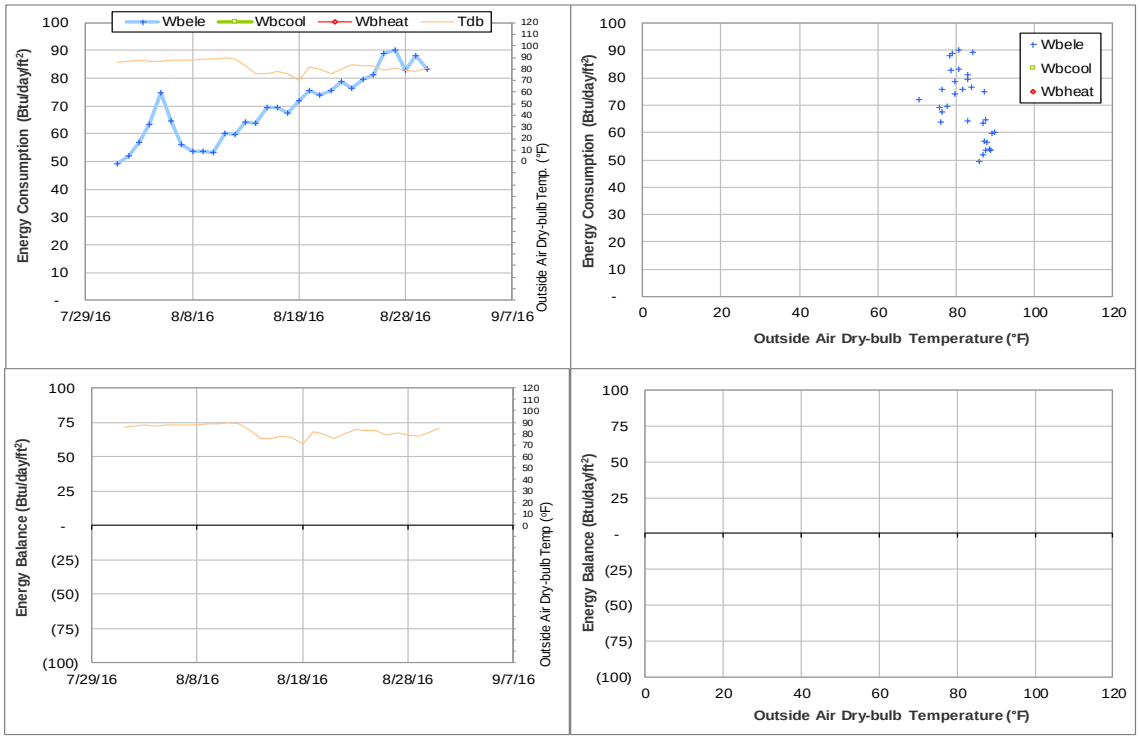


Figure IV-39 Harrell Hall - Dorm 8 TAMU BLDG # 407 Energy Balance Plot during August 2016

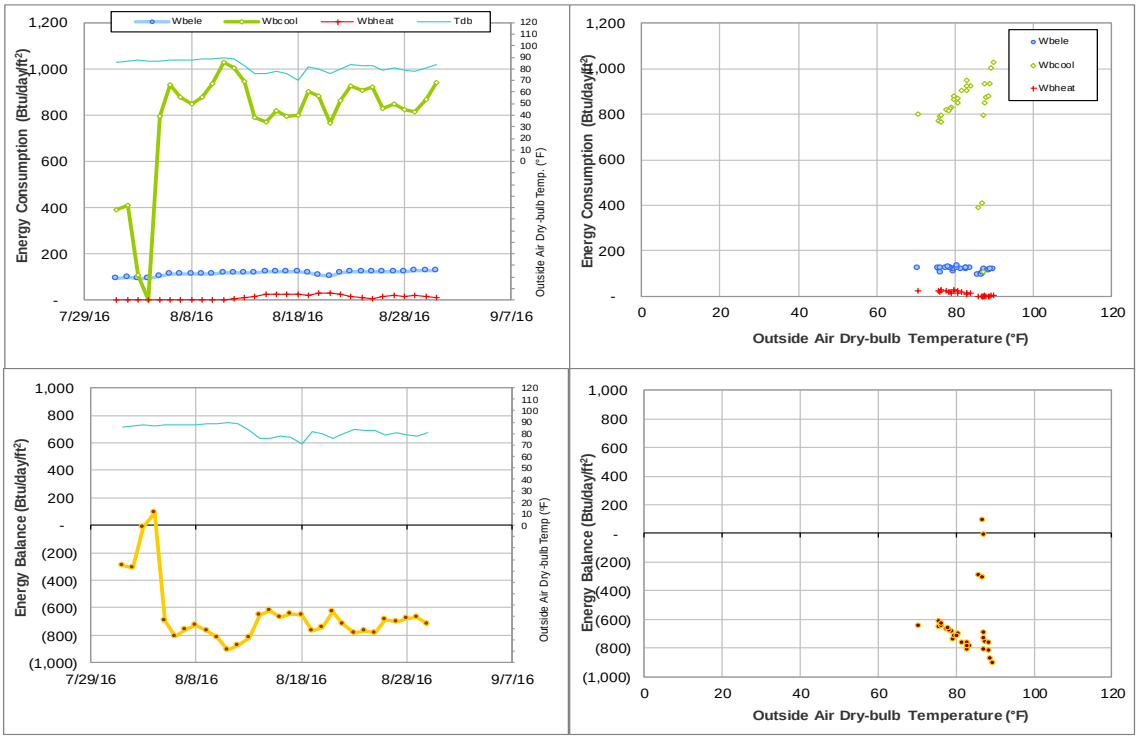


Figure IV-40 Buzbee Leadership Learning Center TAMU BLDG # 1402 Energy Balance Plot during August 2016

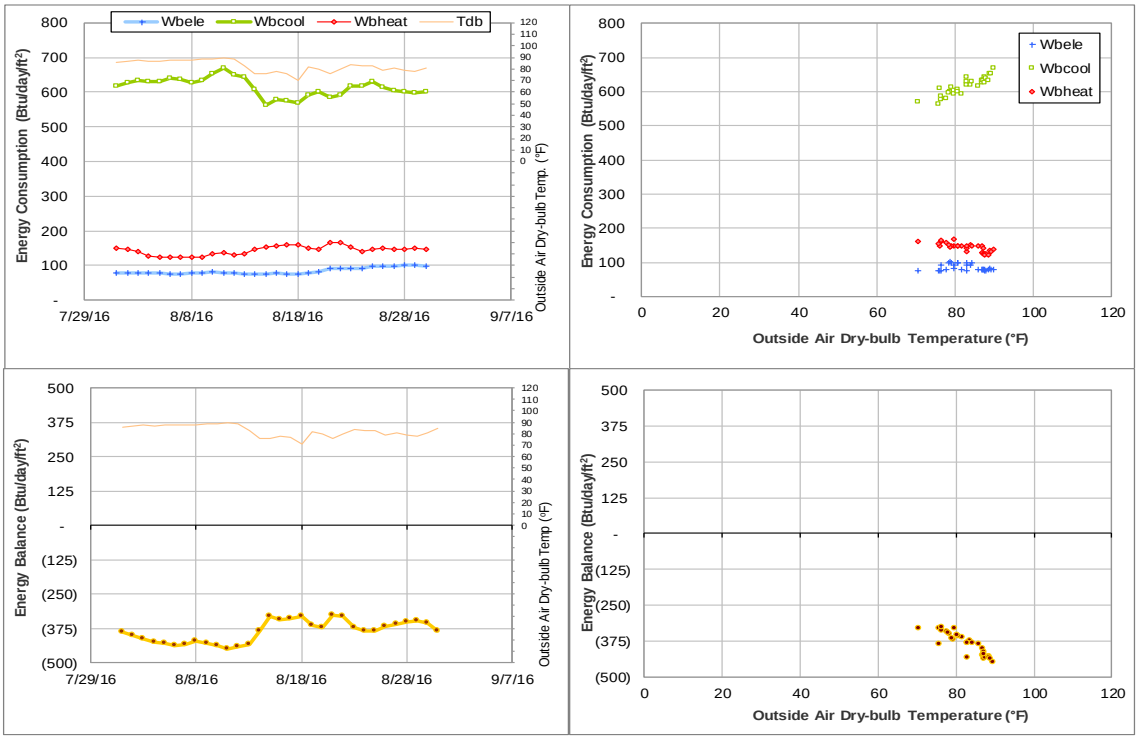


Figure IV-41 Moses Residence Hall TAMU BLDG # 412 Energy Balance Plot during August 2016

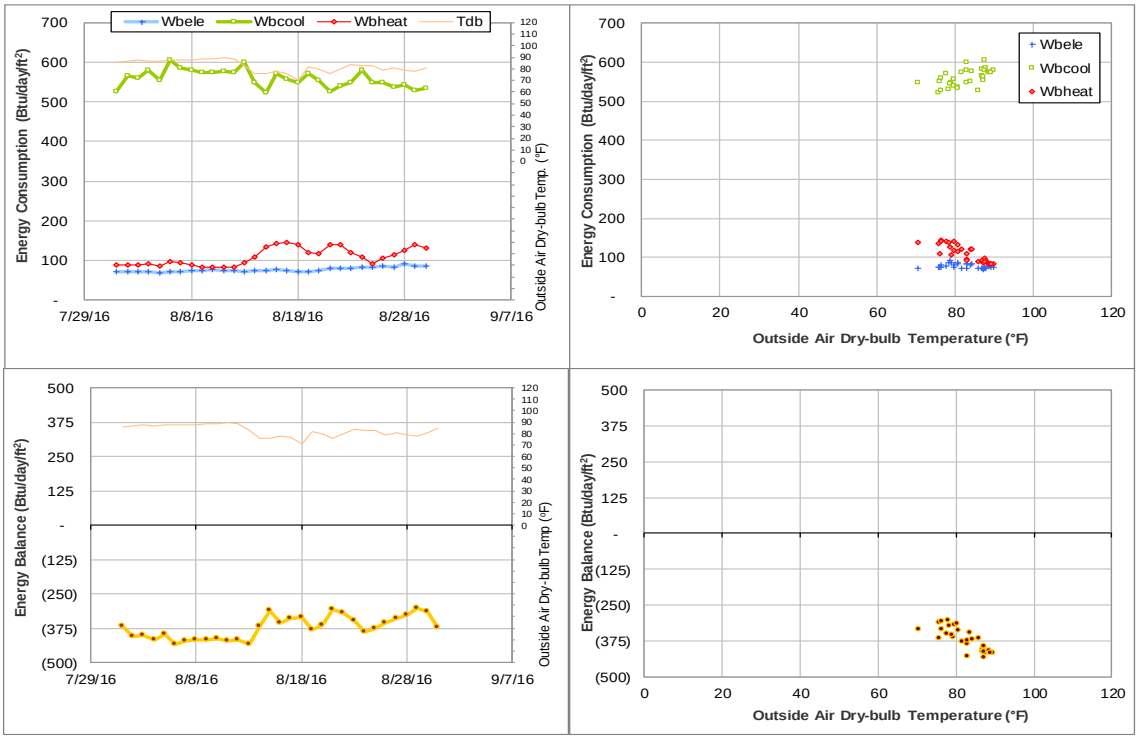


Figure IV-42 Davis-Gary Residence Hall TAMU BLDG # 415 Energy Balance Plot during August 2016

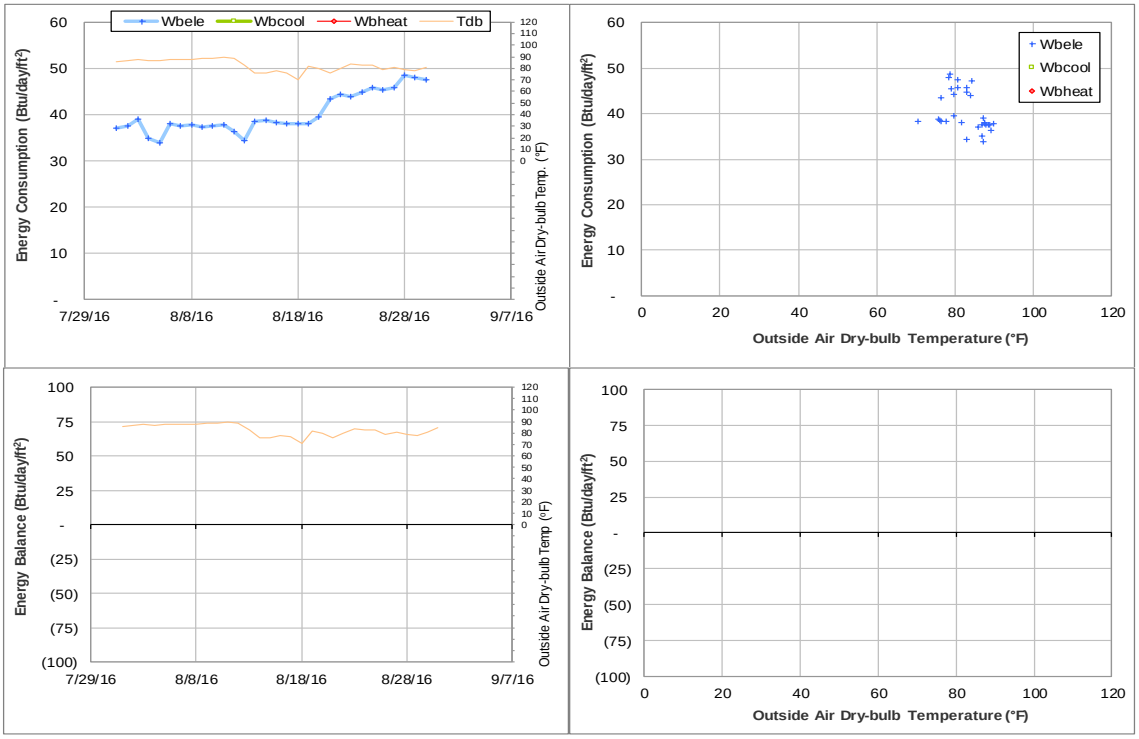


Figure IV-43 Legett Residence Hall TAMU BLDG # 419 Energy Balance Plot during August 2016

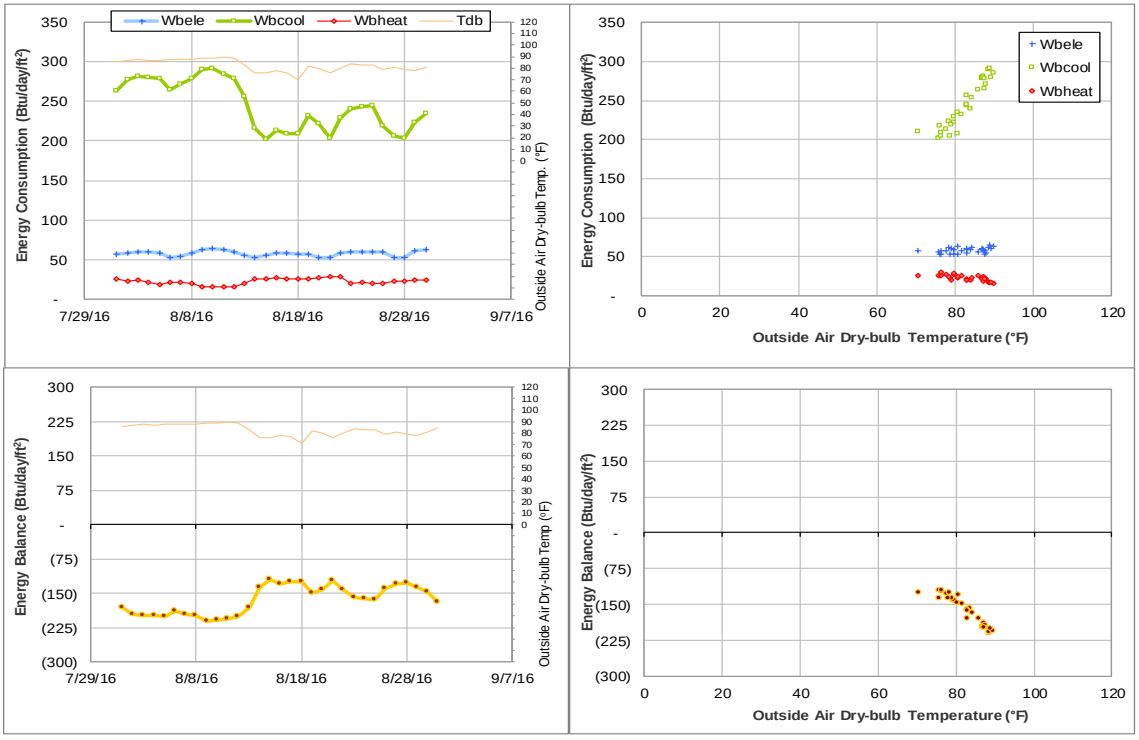


Figure IV-44 Milner Hall TAMU BLDG # 420 Energy Balance Plot during August 2016

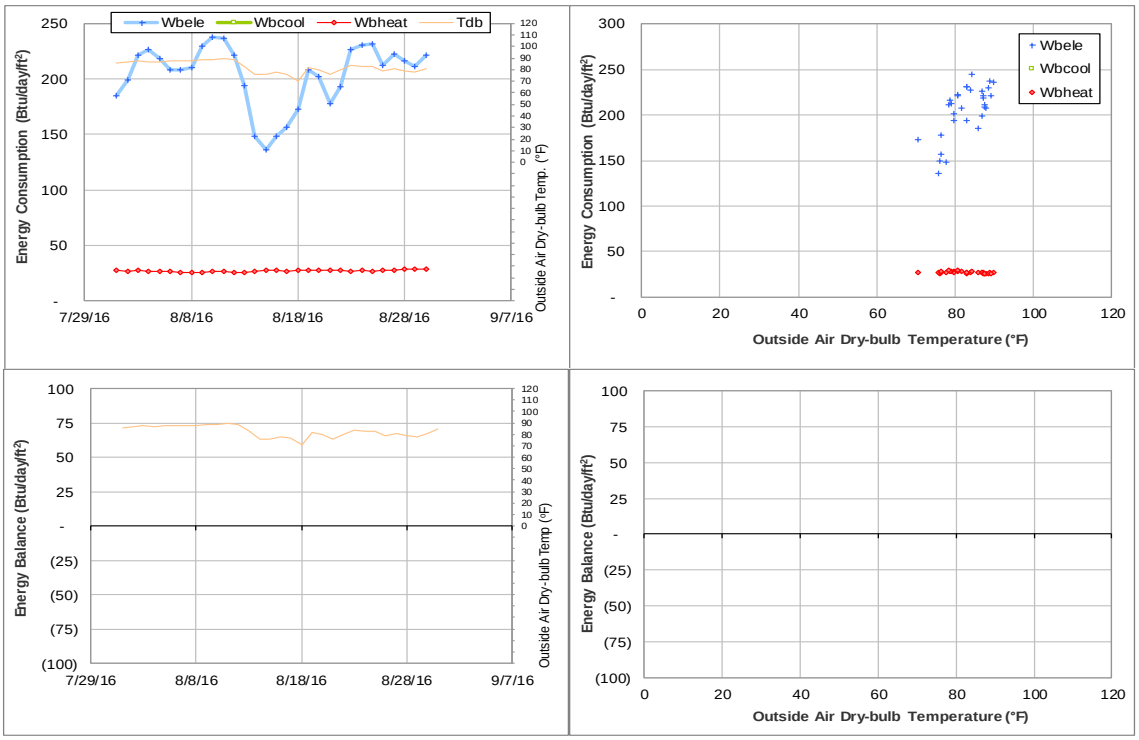


Figure IV-45 Walton Residence Hall TAMU BLDG # 422 Energy Balance Plot during August 2016

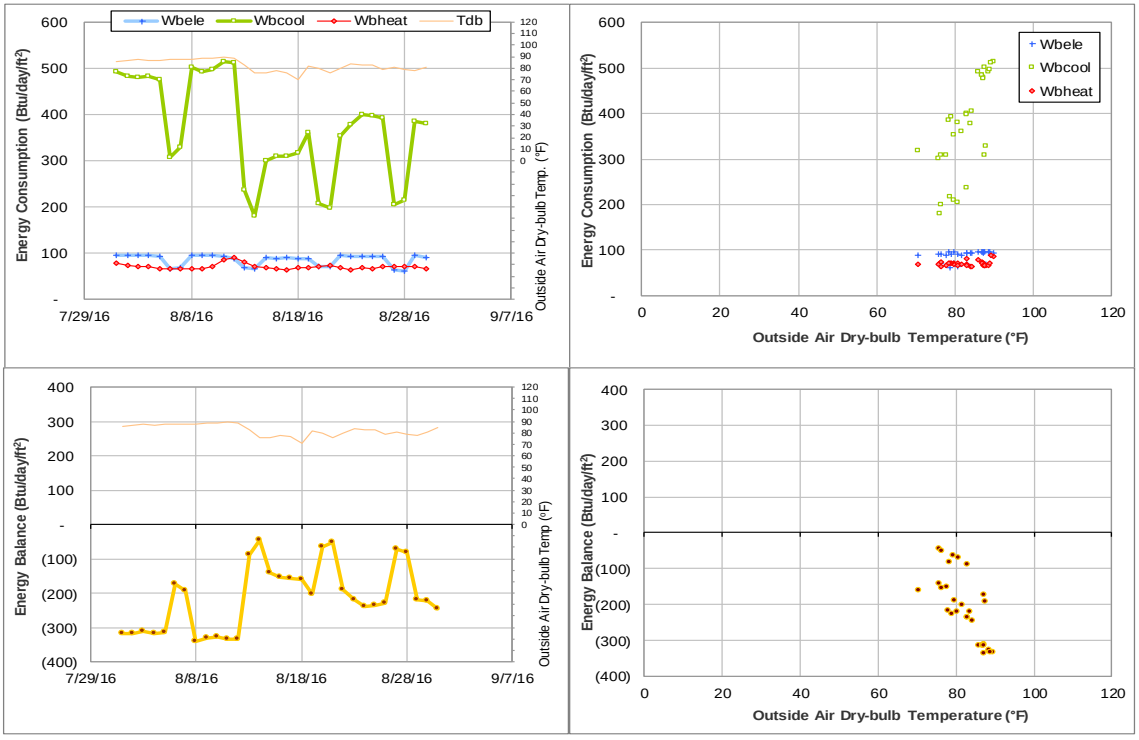


Figure IV-46 Hotard Hall TAMU BLDG # 424 Energy Balance Plot during August 2016

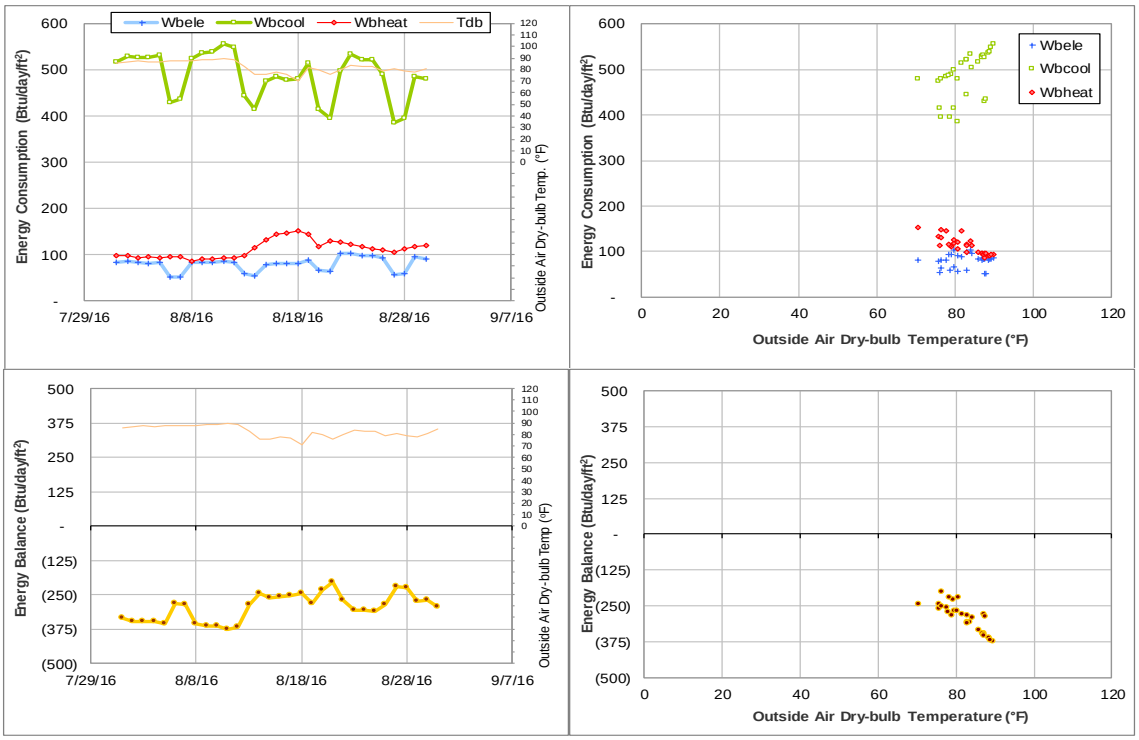


Figure IV-47 Henderson Hall TAMU BLDG # 425 Energy Balance Plot during August 2016

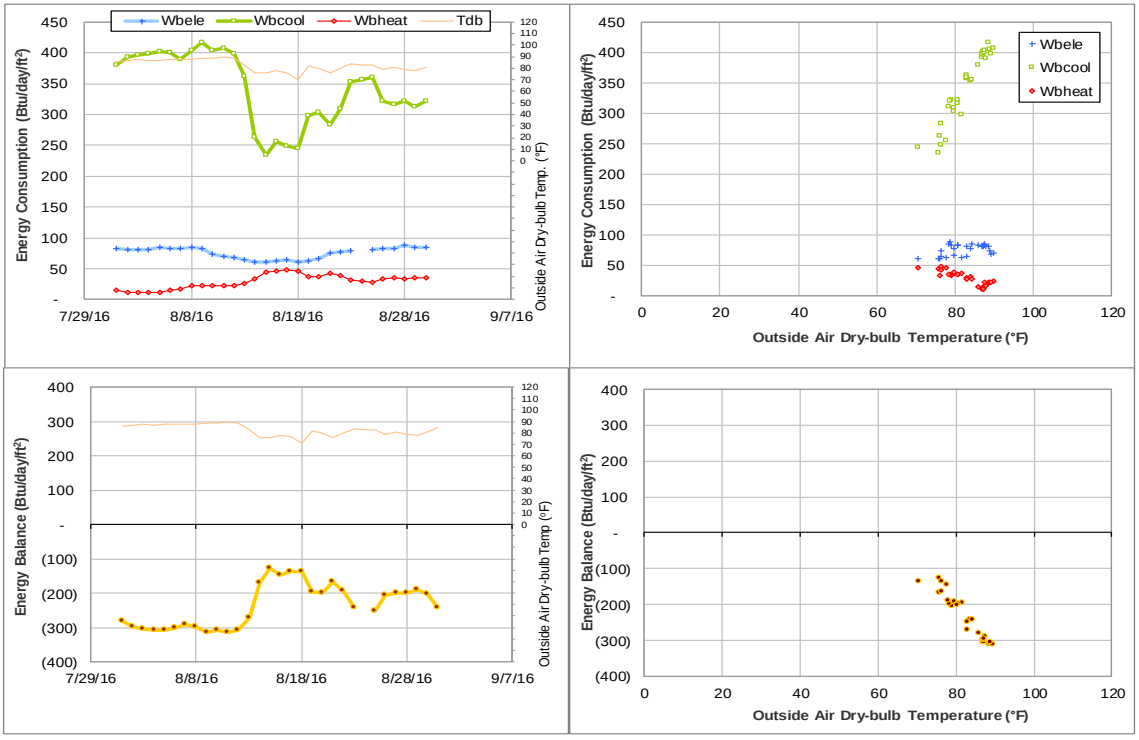


Figure IV-48 FHK Complex TAMU BLDG # 426 Energy Balance Plot during August 2016

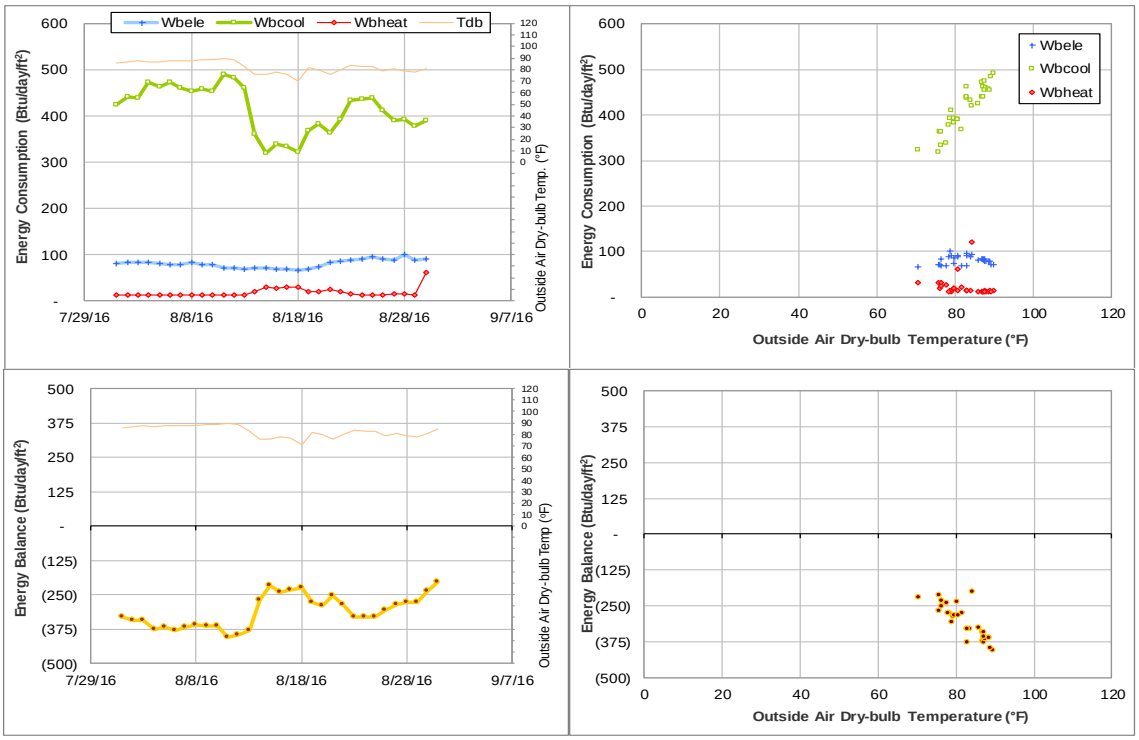


Figure IV-49 Schumacher Residence Hall TAMU BLDG # 430 Energy Balance Plot during August 2016

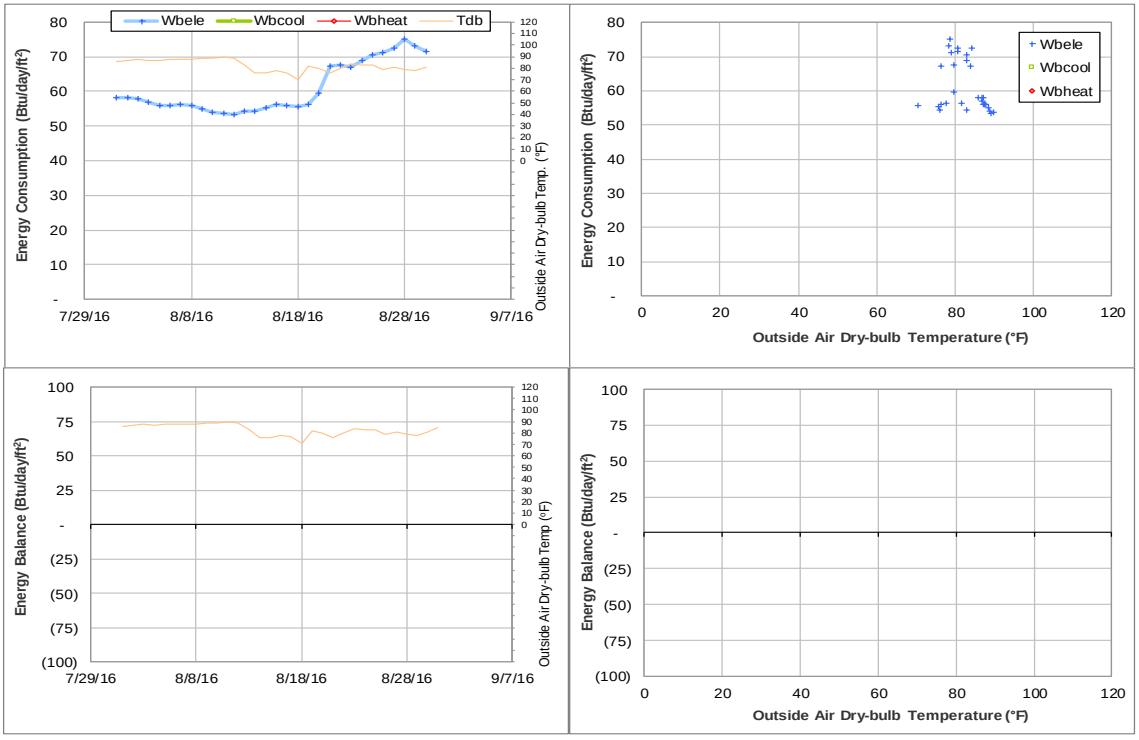


Figure IV-50 Mosher Commons Krueger Dunn Aston TAMU BLDG # 433-440-441-442-447 Energy Balance Plot during August 2016

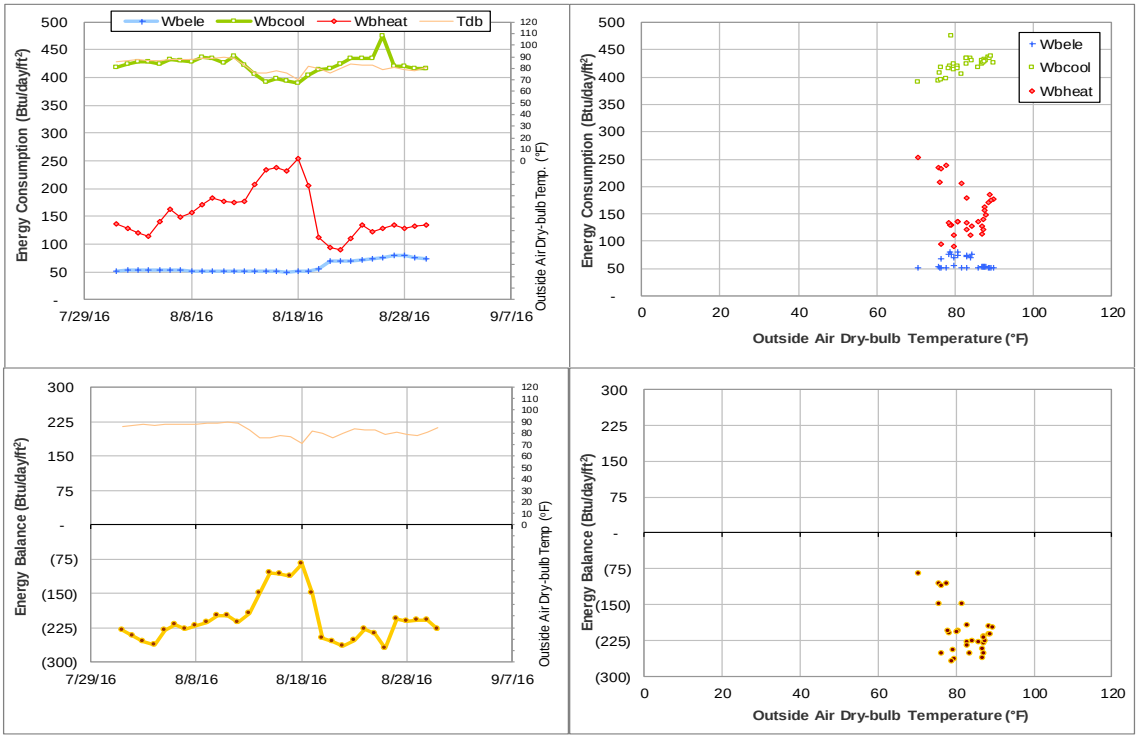


Figure IV-51 Mosher Residence Hall TAMU BLDG # 433 Energy Balance Plot during August 2016

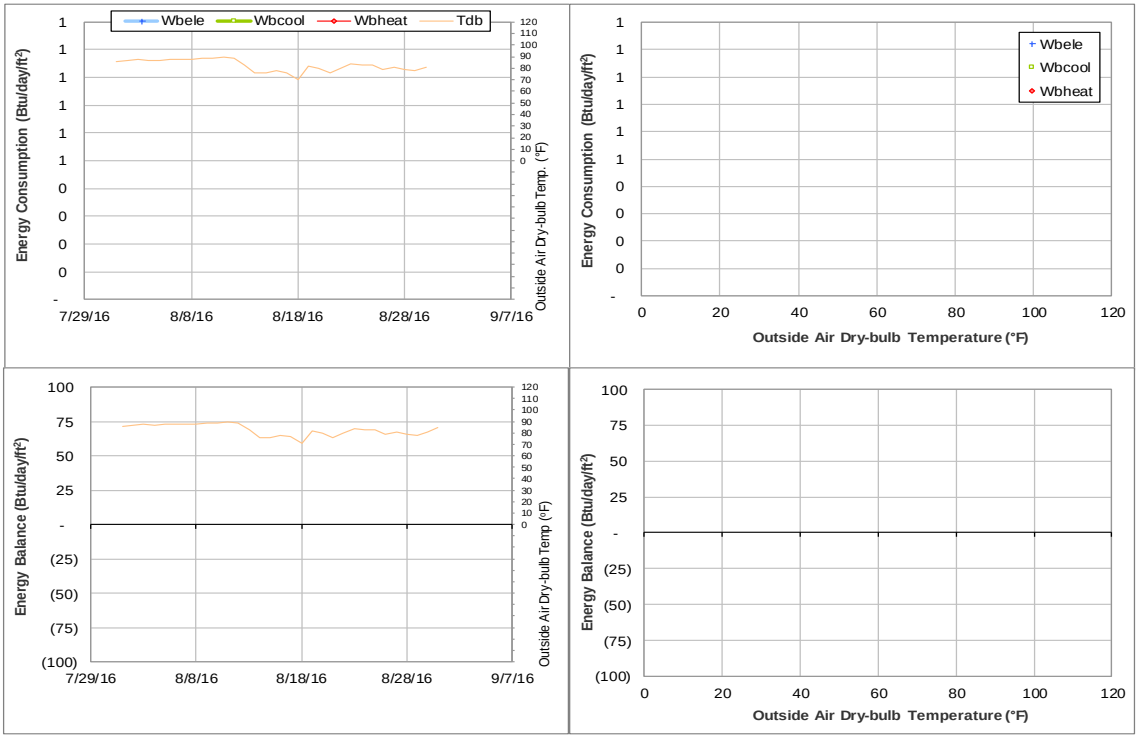


Figure IV-52 Commons Hall TAMU BLDG # 440 Energy Balance Plot during August 2016

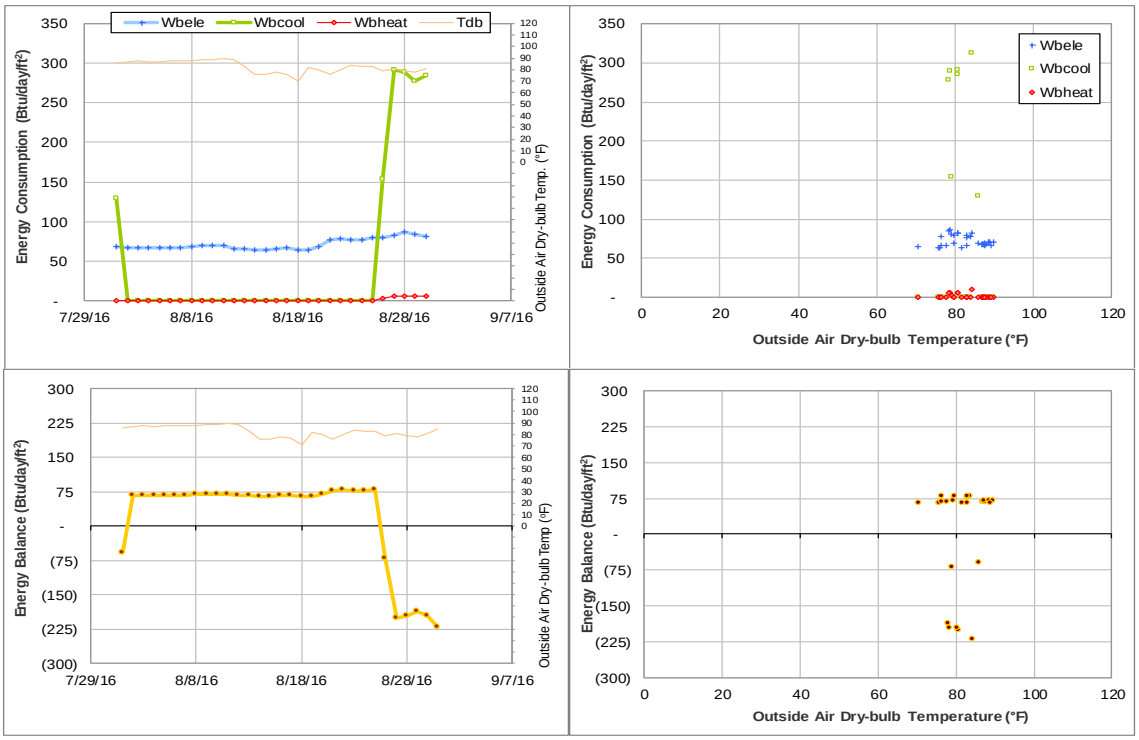


Figure IV-53 Krueger Residence Hall TAMU BLDG # 441 Energy Balance Plot during August 2016

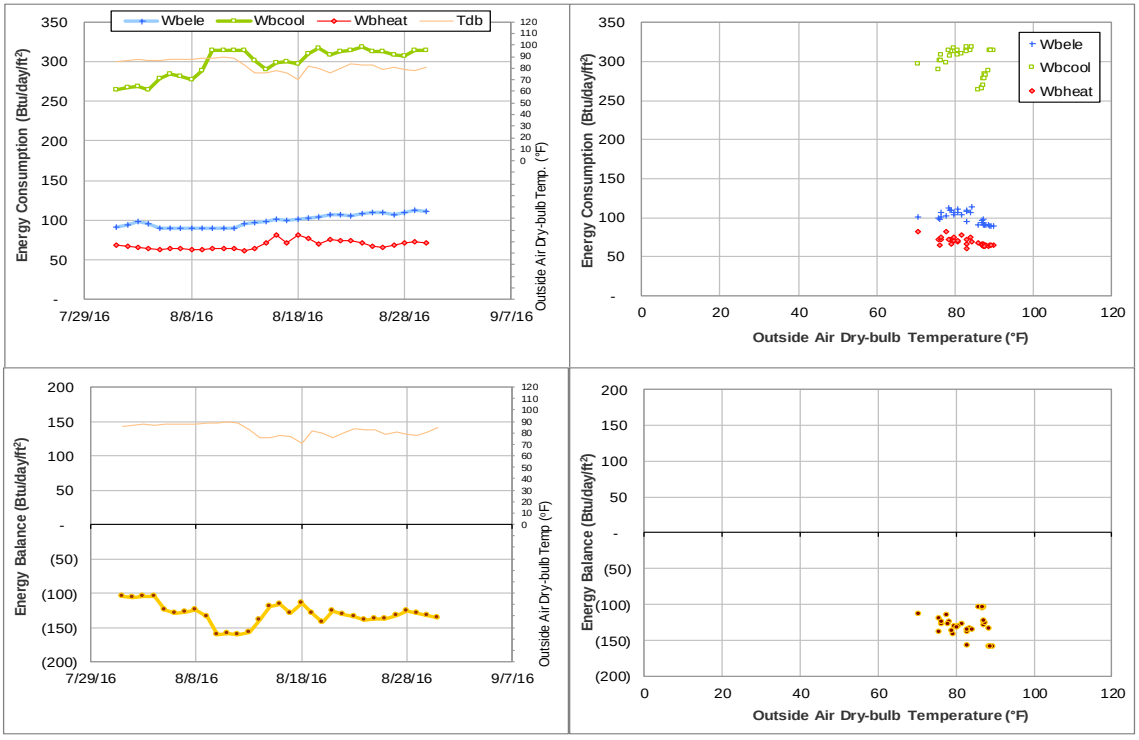


Figure IV-54 Dunn Residence Hall TAMU BLDG # 442 Energy Balance Plot during August 2016

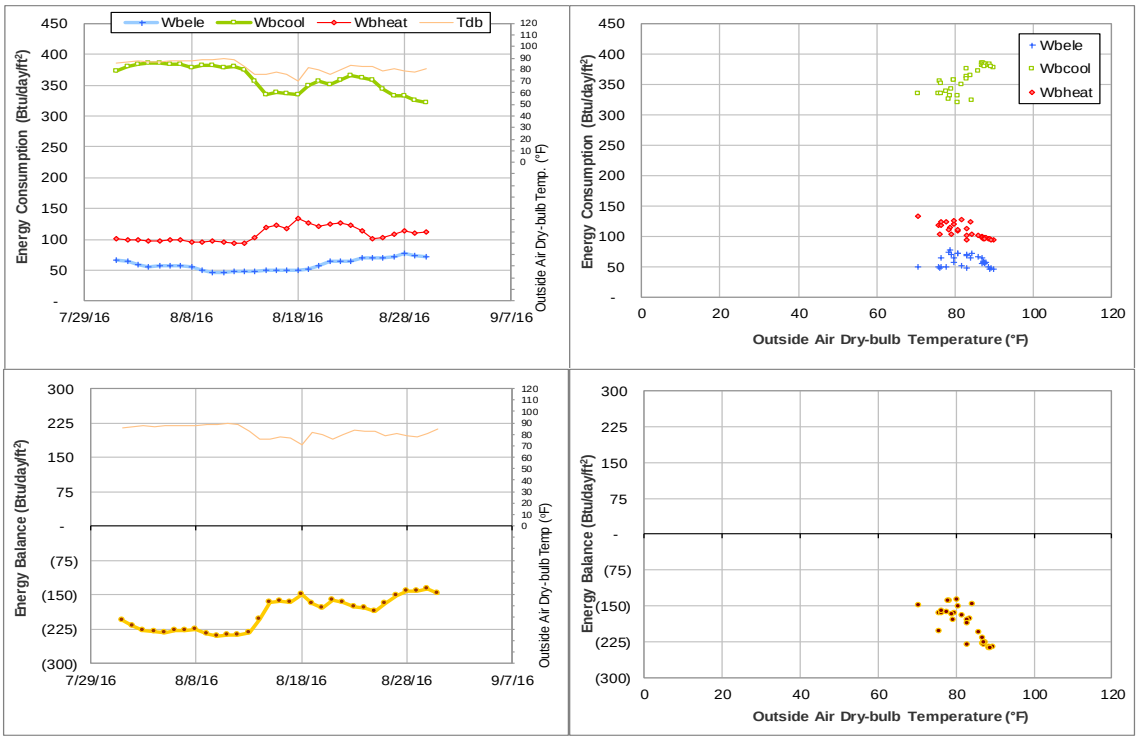


Figure IV-55 Aston Residence Hall TAMU BLDG # 447 Energy Balance Plot during August 2016

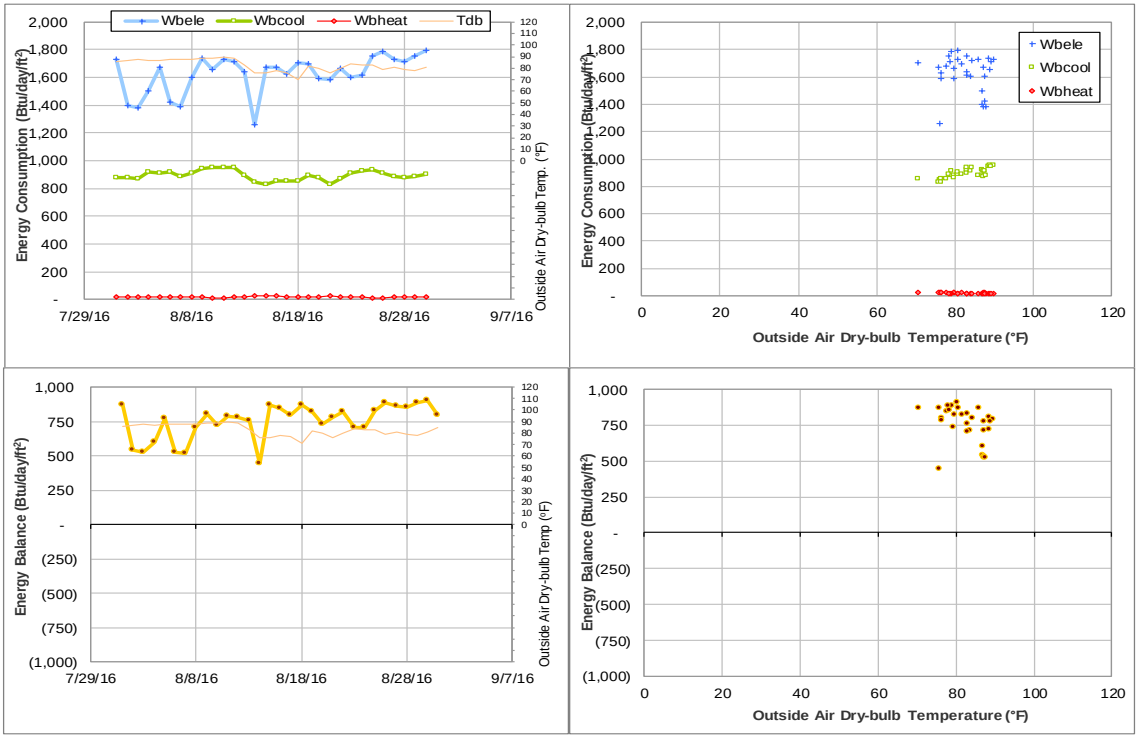


Figure IV-56 Luedecke Building (Cyclotron) TAMU BLDG # 434 Energy Balance Plot during August 2016

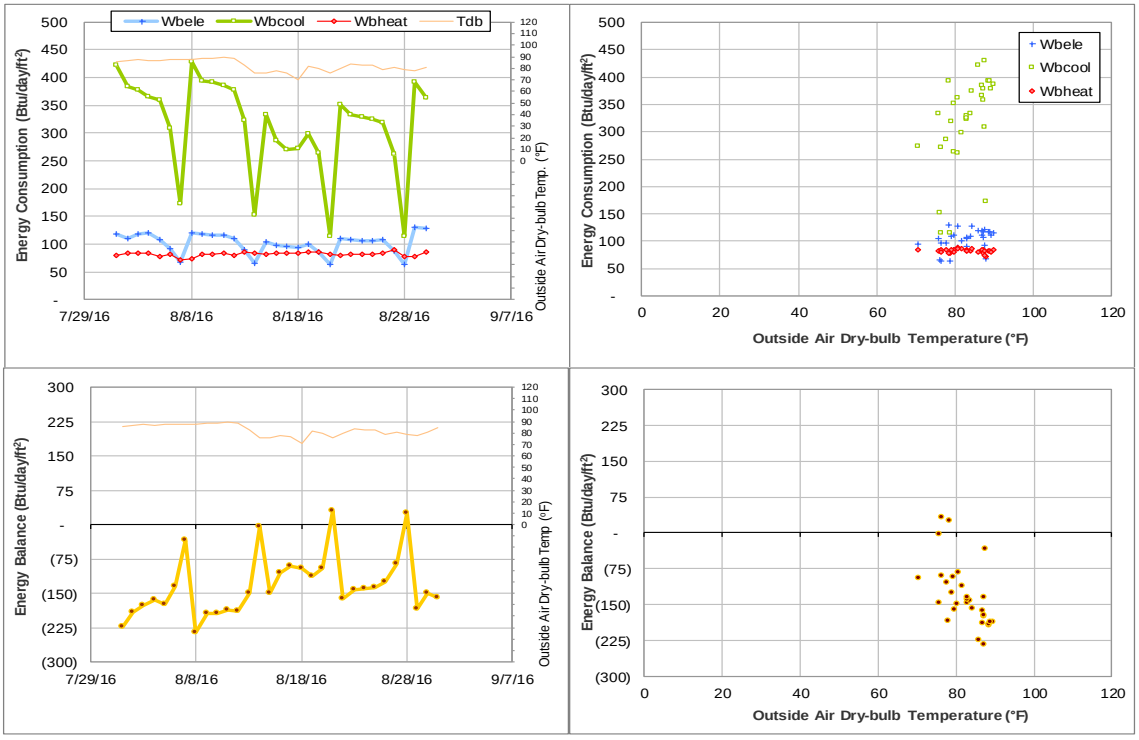


Figure IV-57 Harrington Education Center Office Tower TAMU BLDG # 435 Energy Balance Plot during August 2016

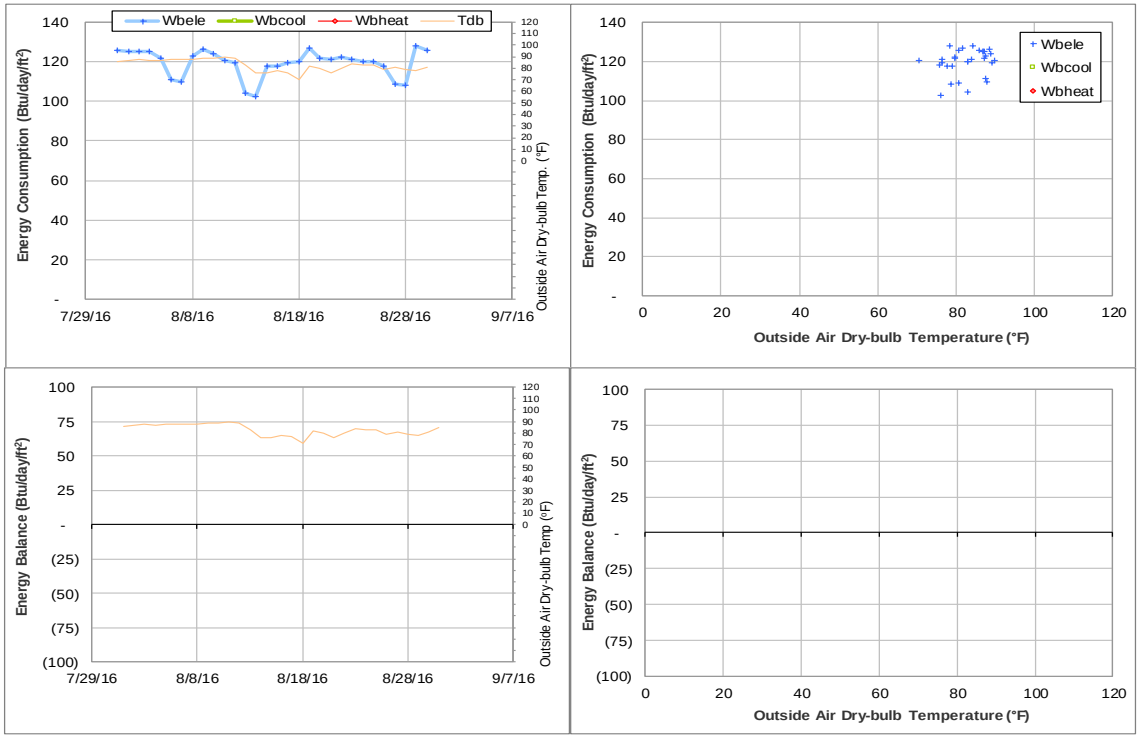


Figure IV-58 Reed-McDonald and Engineering Innovation Center TAMU BLDG # 436-499 Energy Balance Plot during August 2016

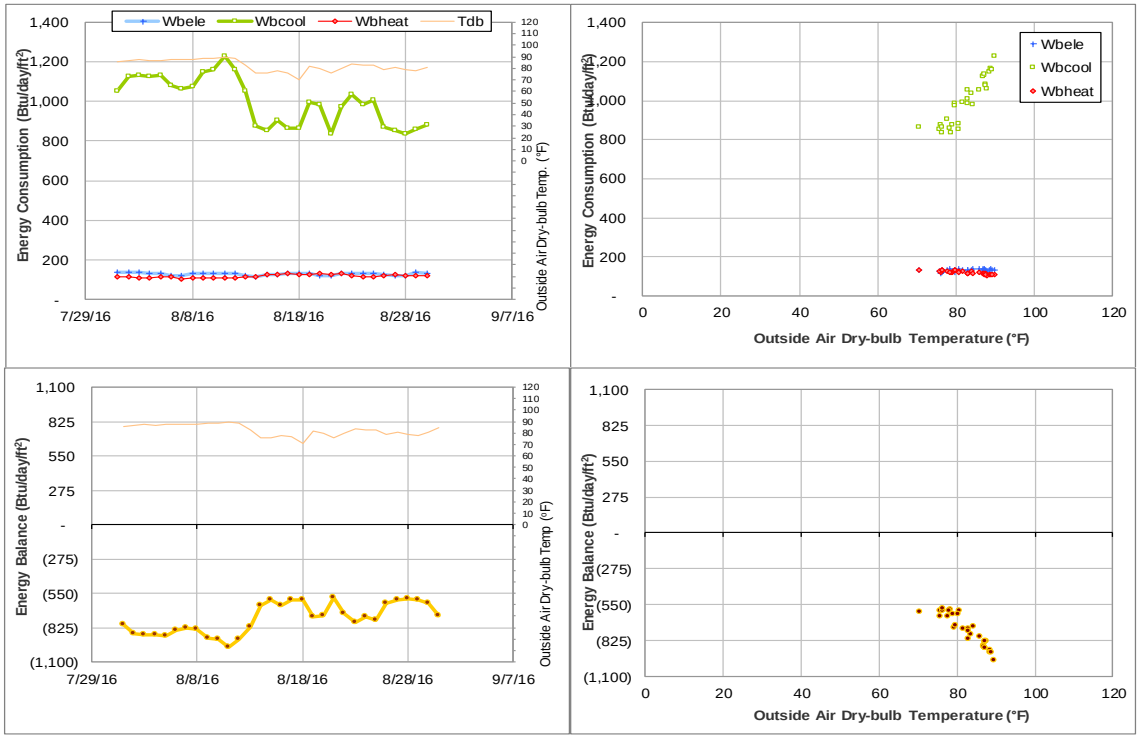


Figure IV-59 Reed-McDonald Building TAMU BLDG # 436 Energy Balance Plot during August 2016

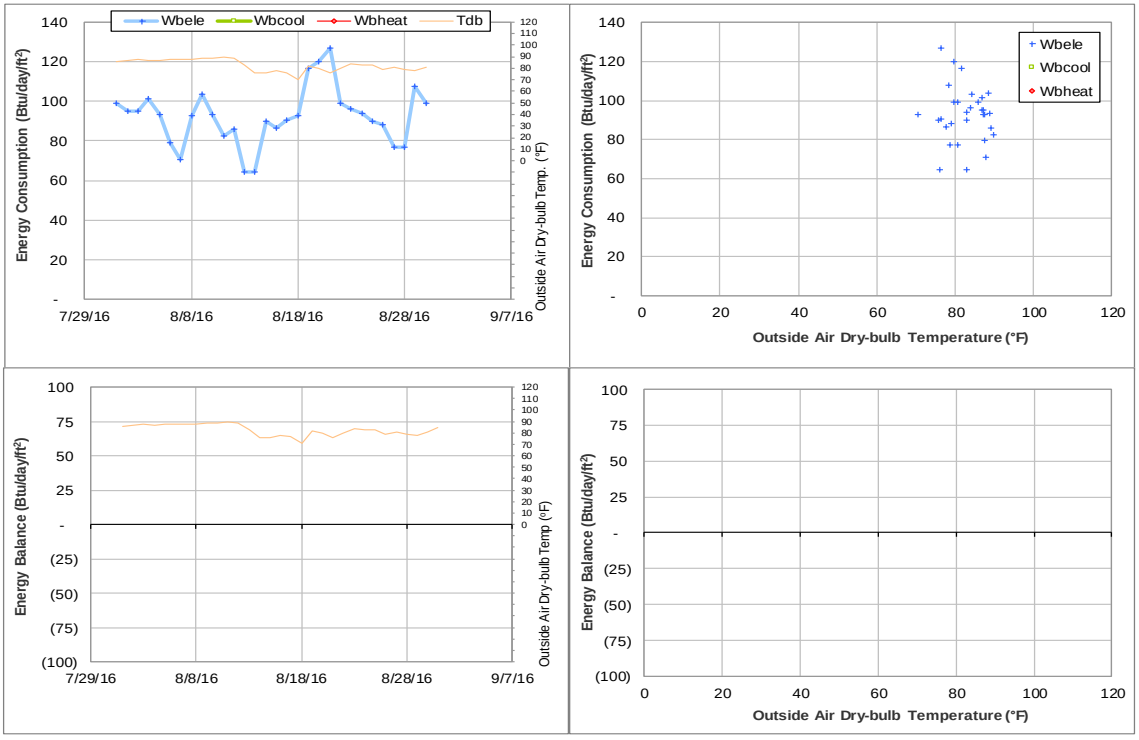


Figure IV-60 Engineering Innovation Center TAMU BLDG # 499 Energy Balance Plot during August 2016

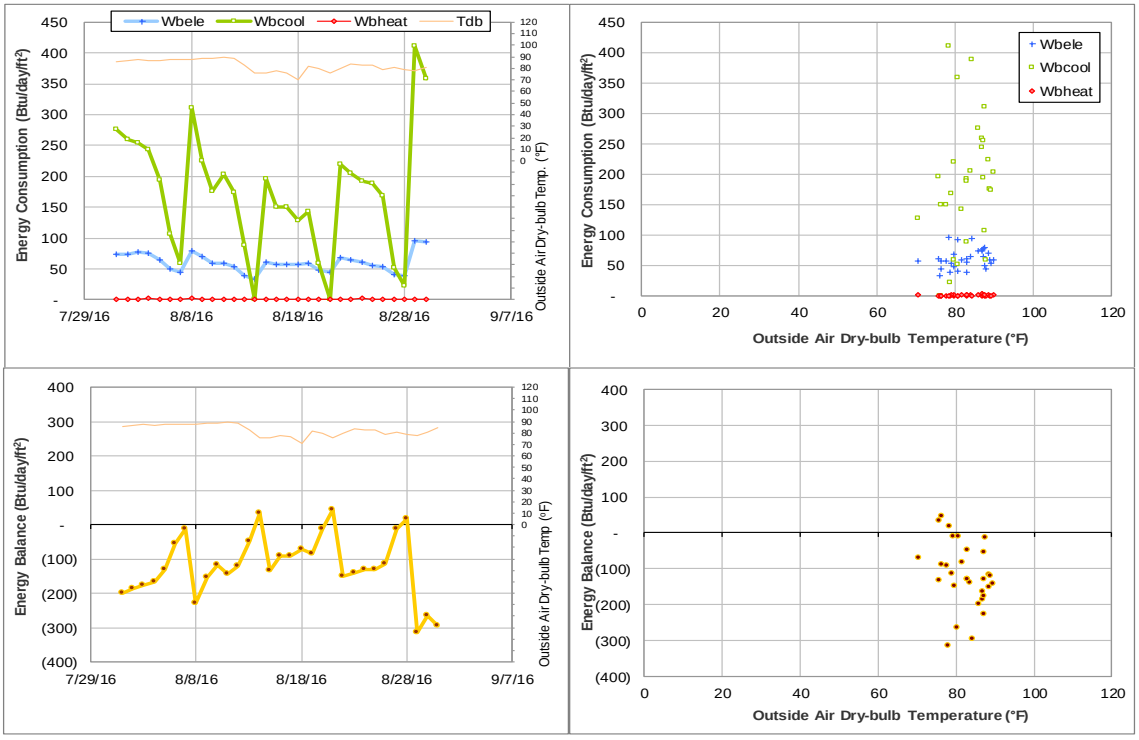


Figure IV-61 Harrington Education Center Classroom Building TAMU BLDG # 438 Energy Balance Plot during August 2016

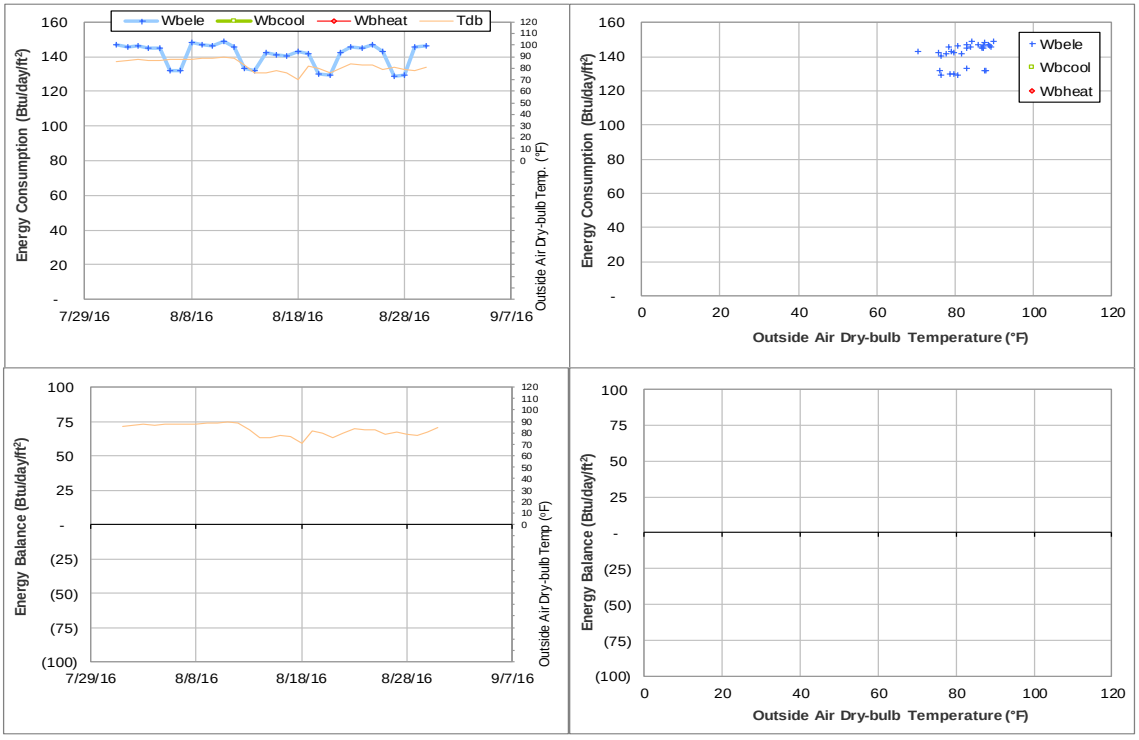


Figure IV-62 Oceanography & Meteorology Building TAMU BLDG # 443 Energy Balance Plot during August 2016

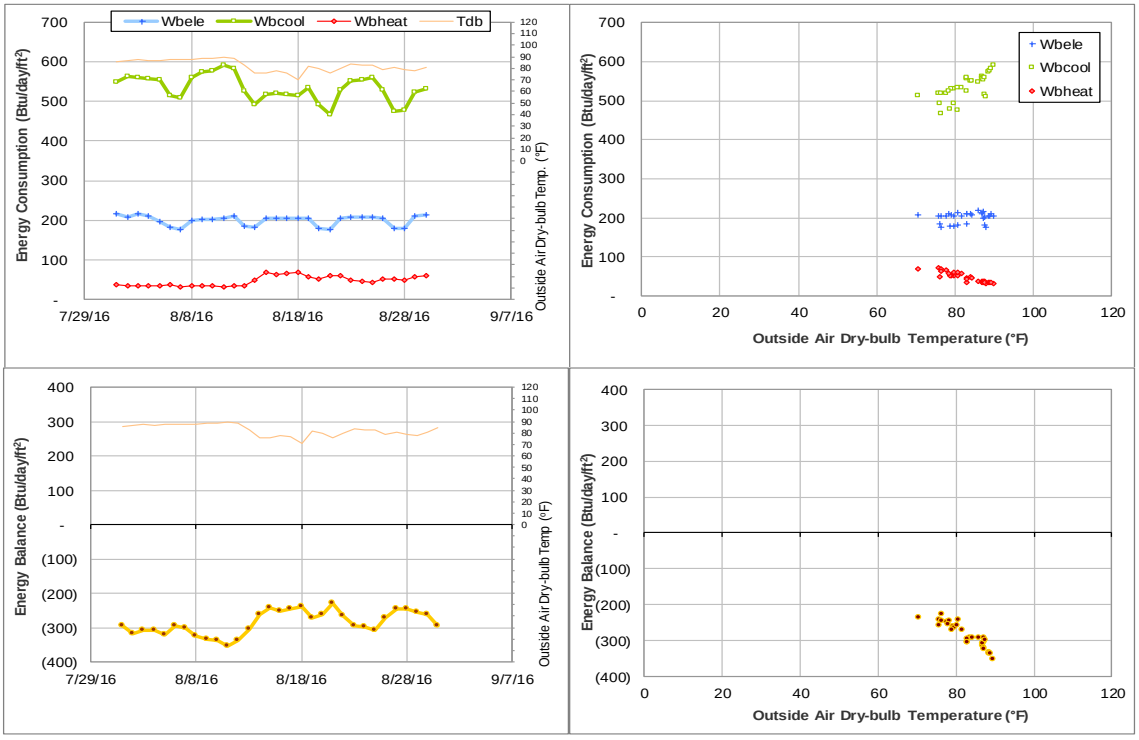


Figure IV-63 Peterson Building TAMU BLDG # 444 Energy Balance Plot during August 2016

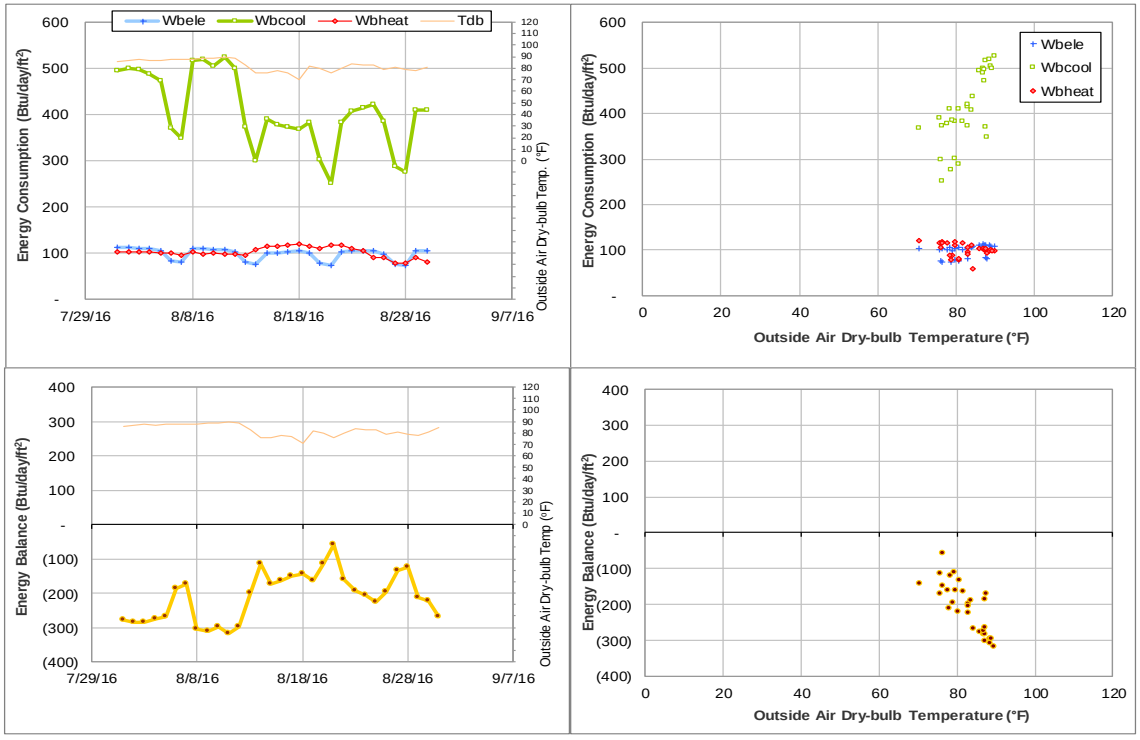


Figure IV-64 Teague Research Center and DPC Annex TAMU BLDG # 445-517 Energy Balance Plot during August 2016

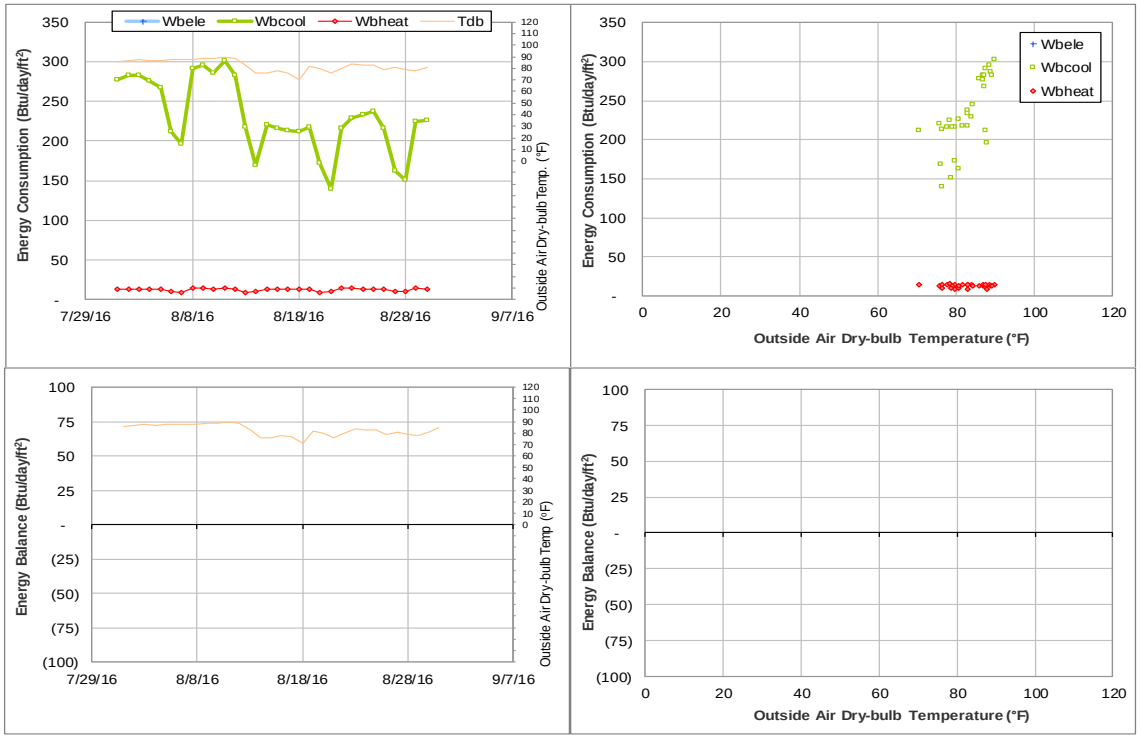


Figure IV-65 Teague Research Center TAMU BLDG # 445 Energy Balance Plot during August 2016

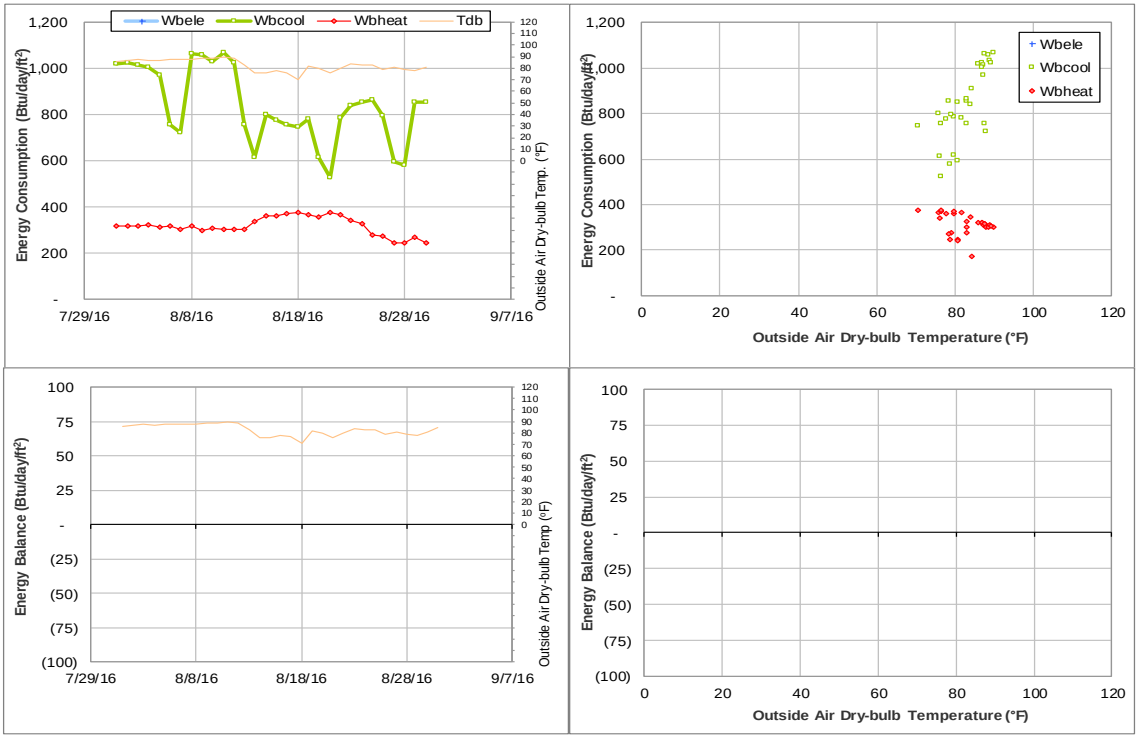


Figure IV-66 DPC Annex TAMU BLDG # 517 Energy Balance Plot during August 2016

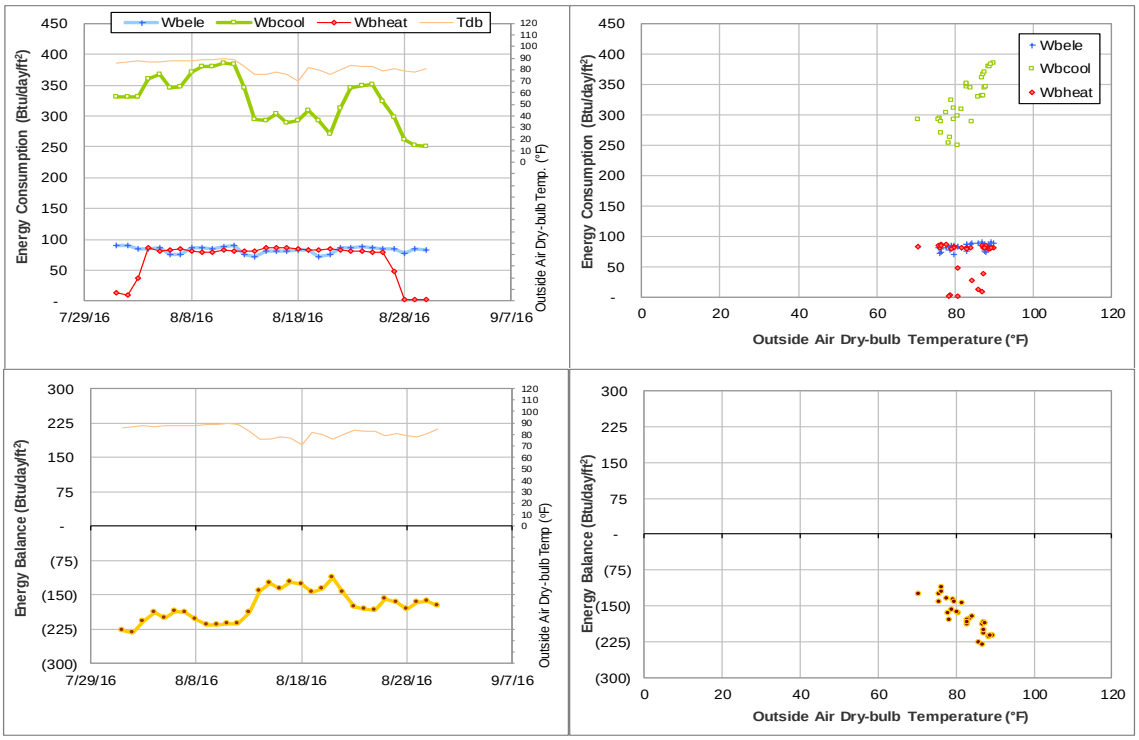


Figure IV-67 Rudder Tower and Theatre Complex TAMU BLDG # 446 Energy Balance Plot during August 2016

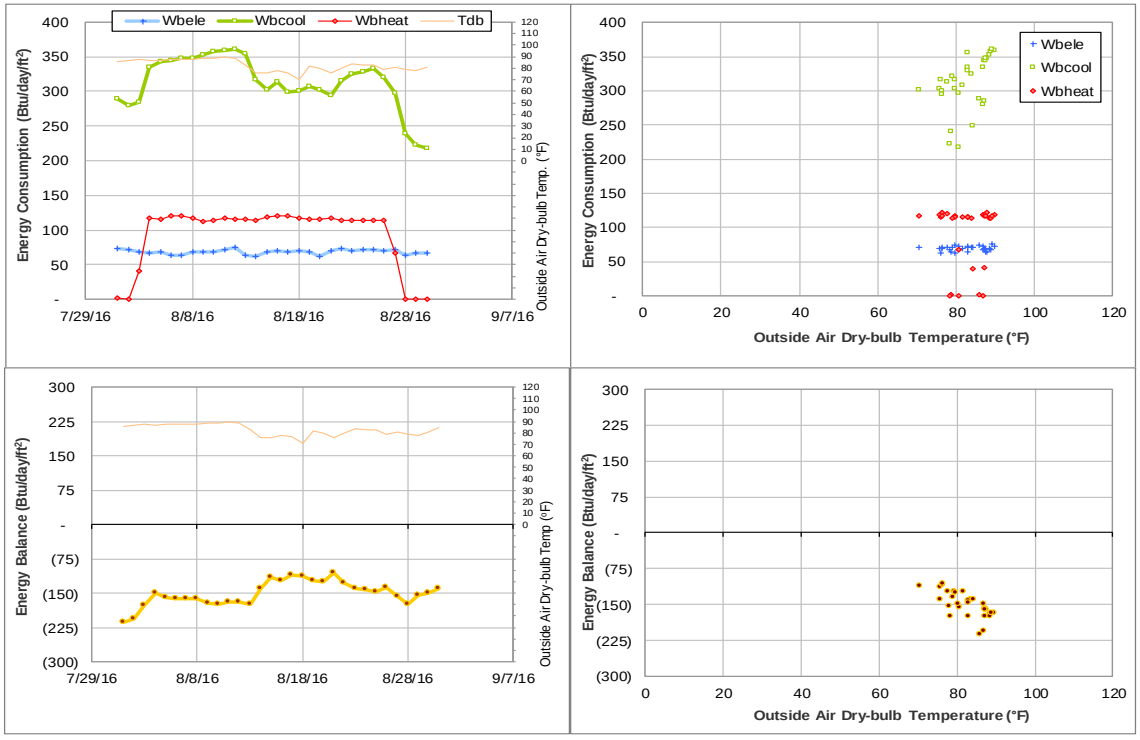


Figure IV-68 Rudder Theatre Complex TAMU BLDG # 446 Energy Balance Plot during August 2016

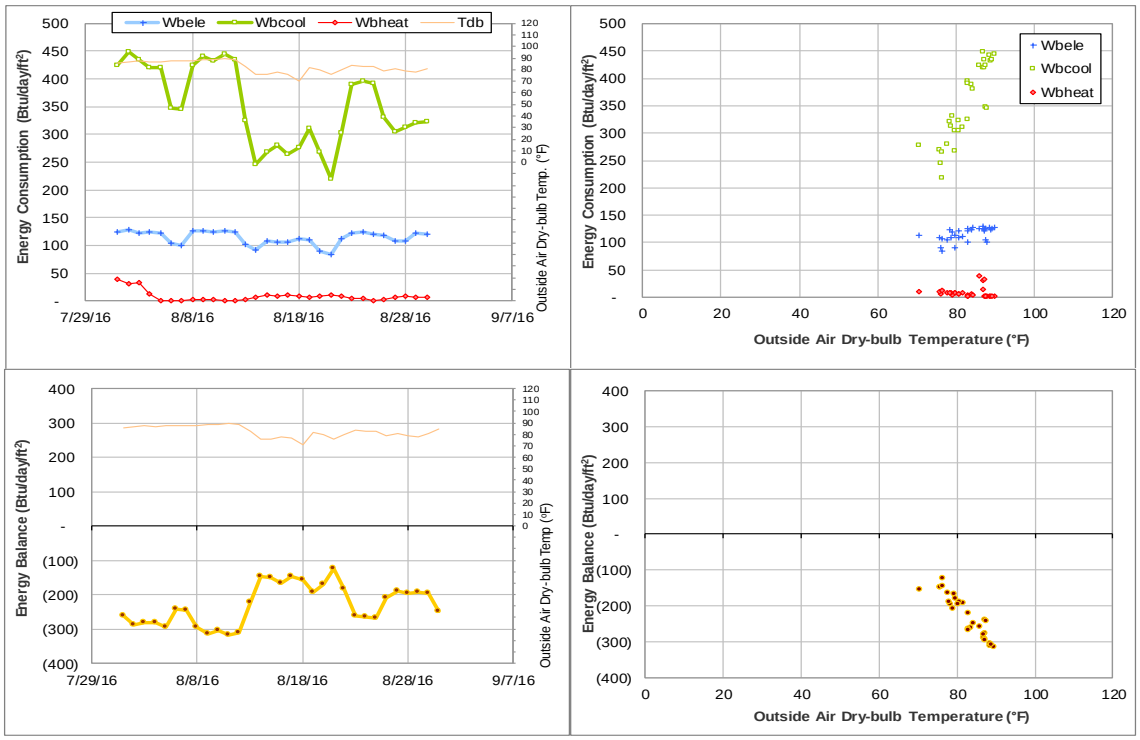


Figure IV-69 Rudder Tower TAMU BLDG # 446 Energy Balance Plot during August 2016

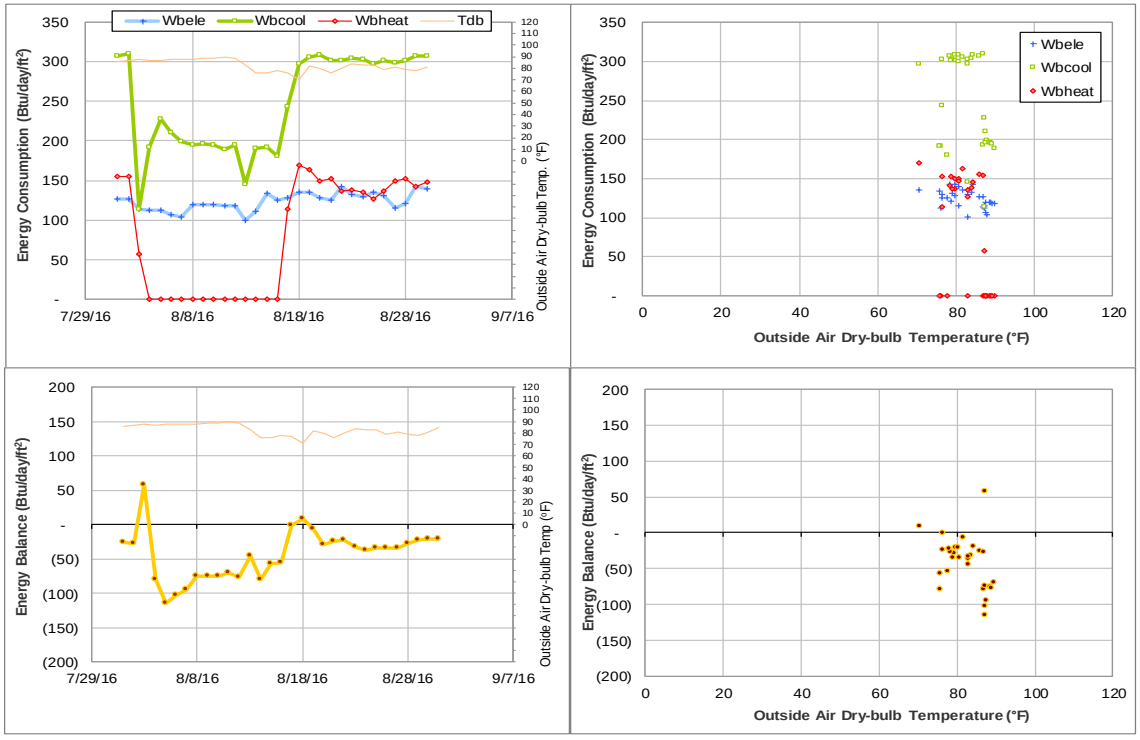


Figure IV-70 Adams Band Hall TAMU BLDG # 448 Energy Balance Plot during August 2016

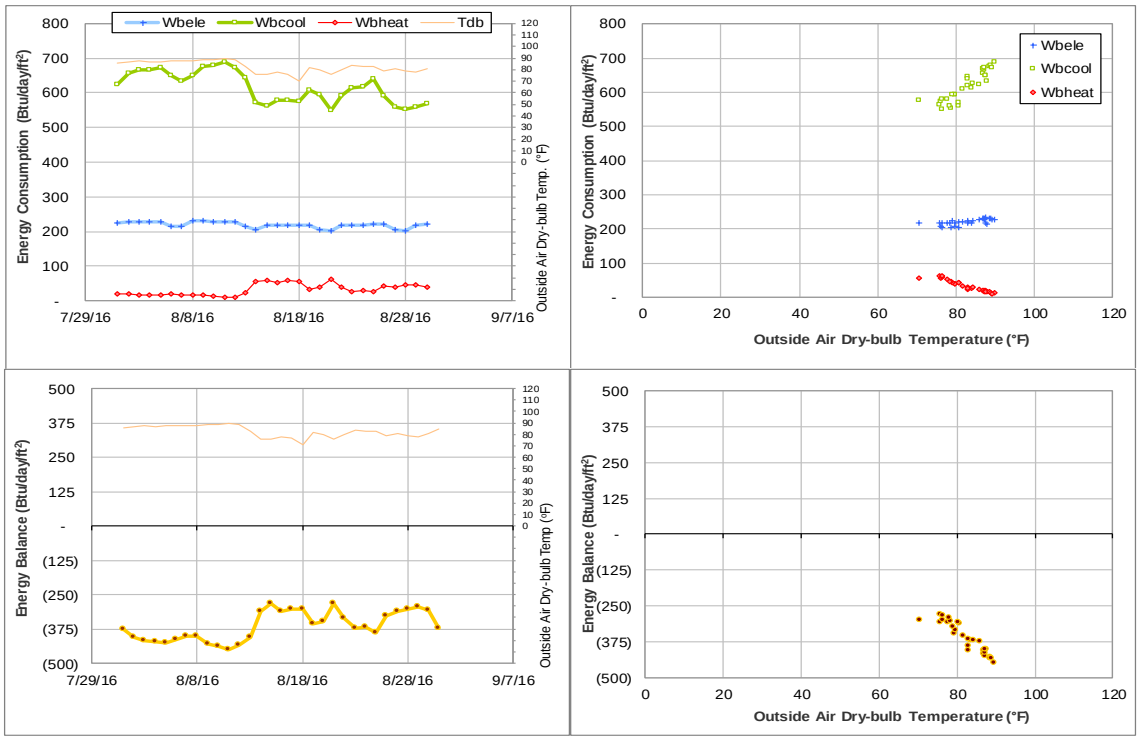


Figure IV-71 Biological Sciences Building - West TAMU BLDG # 449 Energy Balance Plot during August 2016

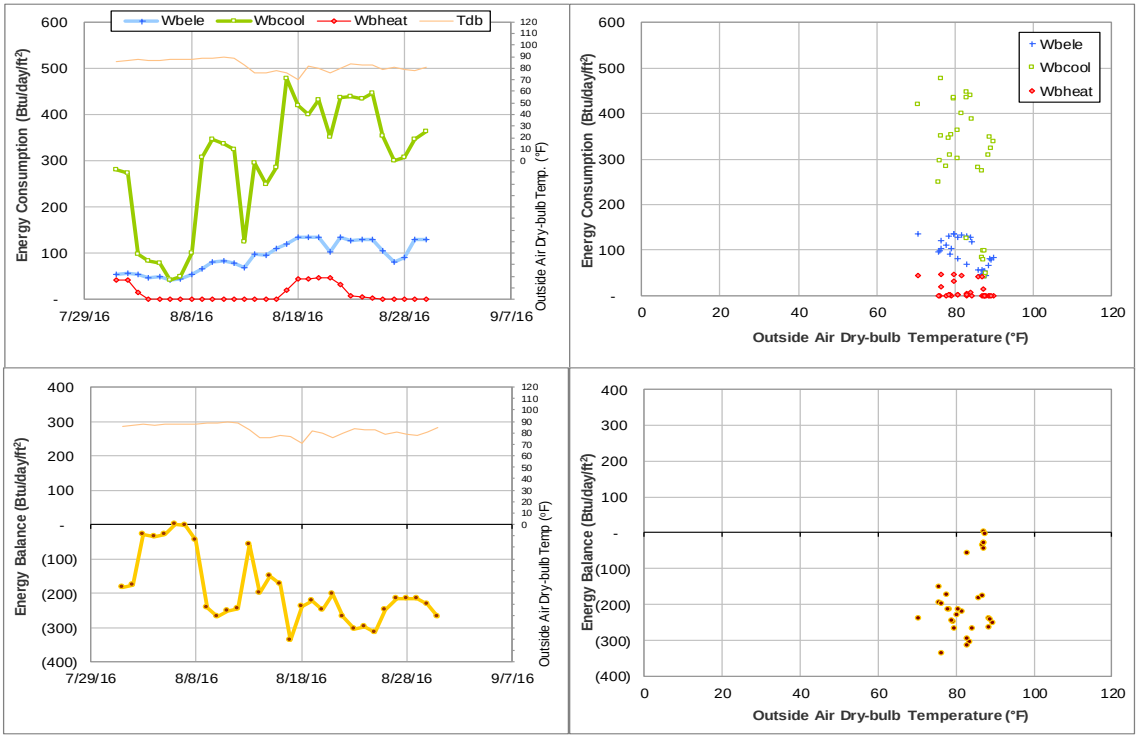


Figure IV-72 Duncan Dining Hall TAMU BLDG # 450 Energy Balance Plot during August 2016

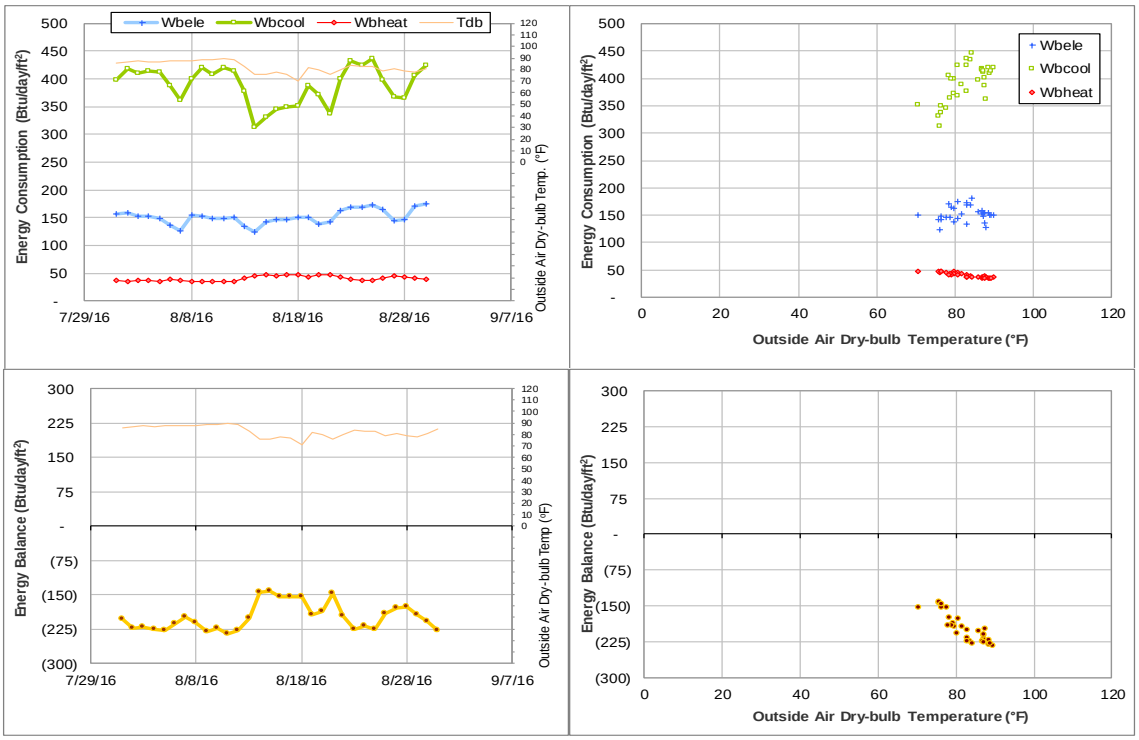


Figure IV-73 MSC TAMU BLDG # 454 Energy Balance Plot during August 2016

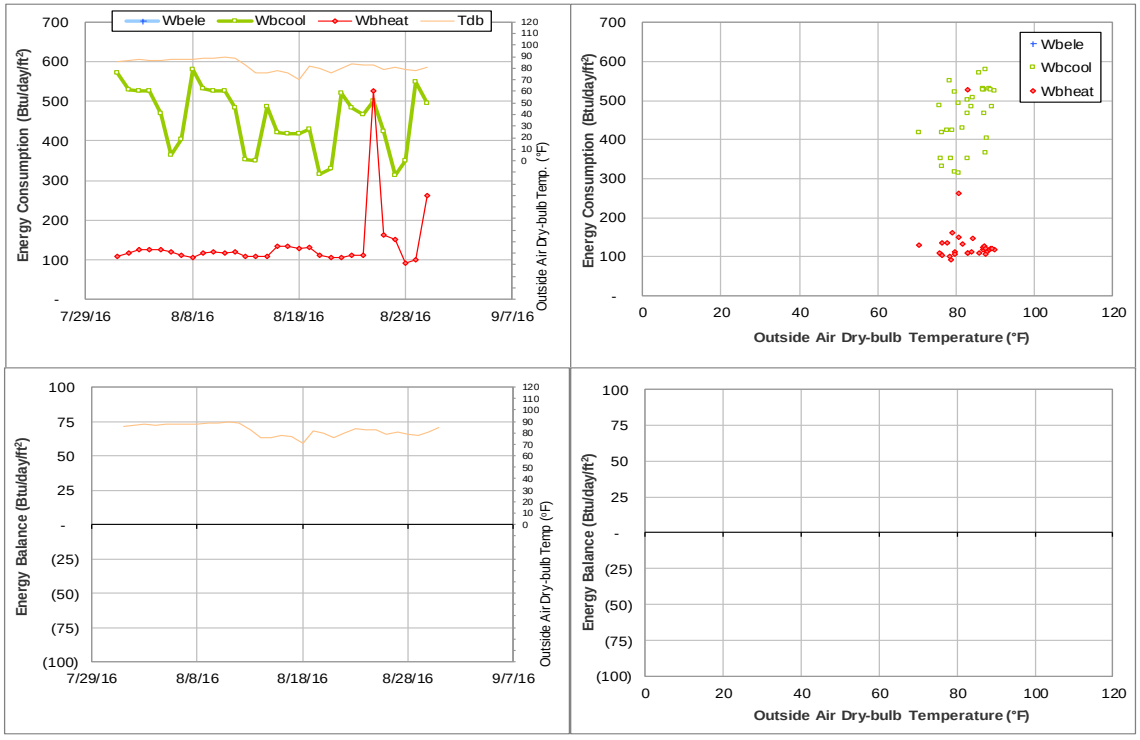


Figure IV-74 Military Sciences Building TAMU BLDG # 456 Energy Balance Plot during August 2016

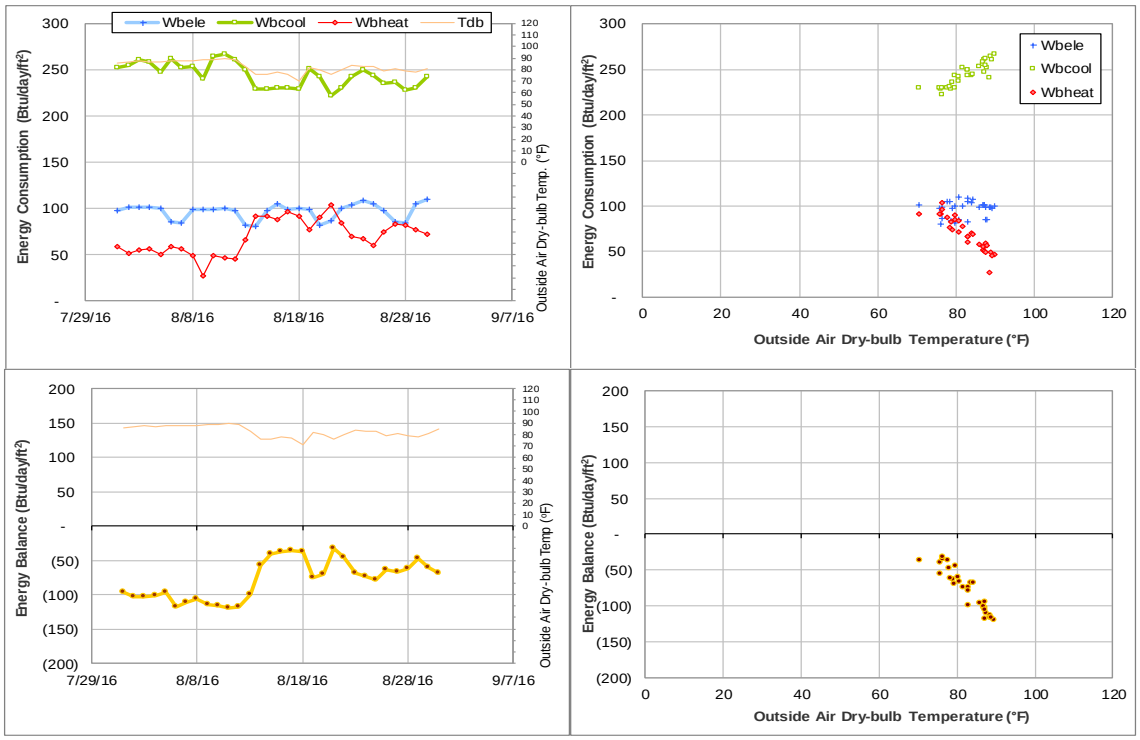


Figure IV-75 TAES Annex Building TAMU BLDG # 457 Energy Balance Plot during August 2016

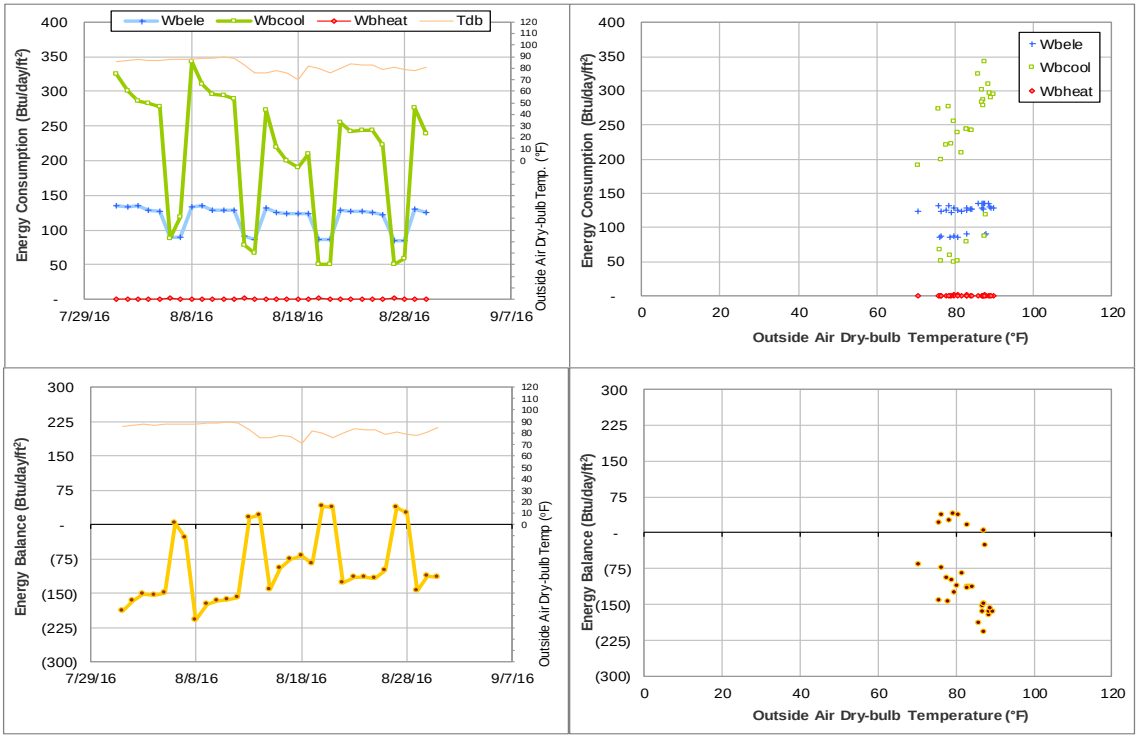


Figure IV-76 Coke Building TAMU BLDG # 461 Energy Balance Plot during August 2016

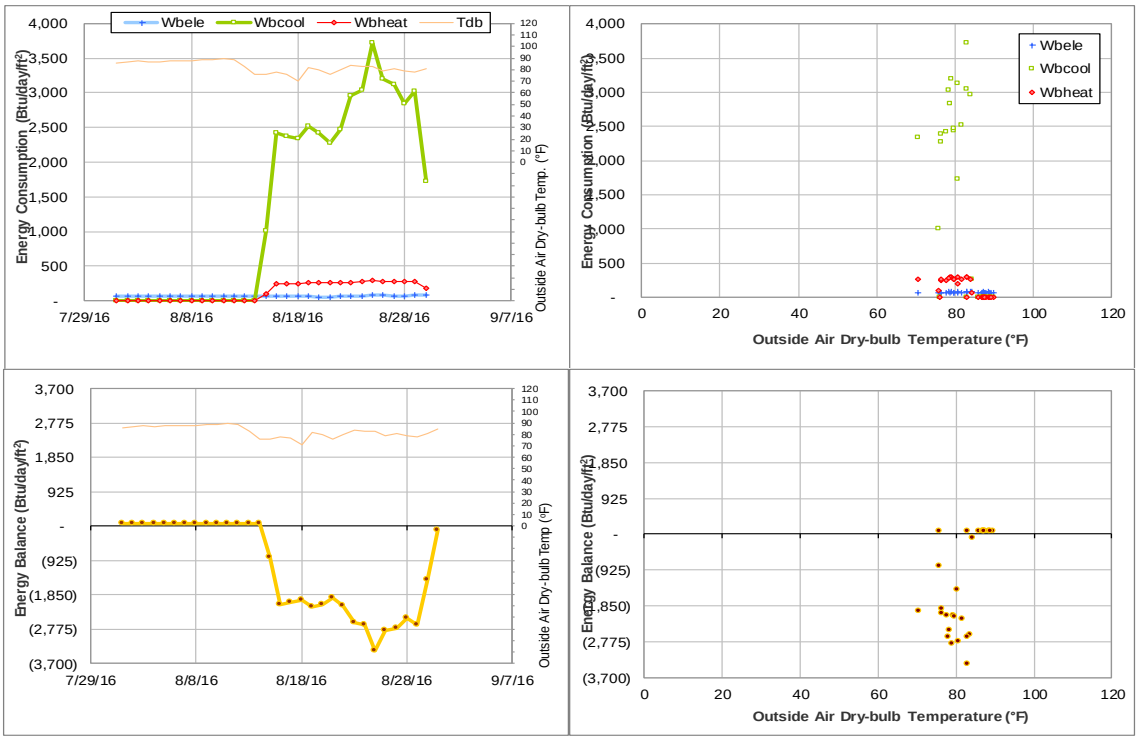


Figure IV-77 Academic Building TAMU BLDG # 462 Energy Balance Plot during August 2016

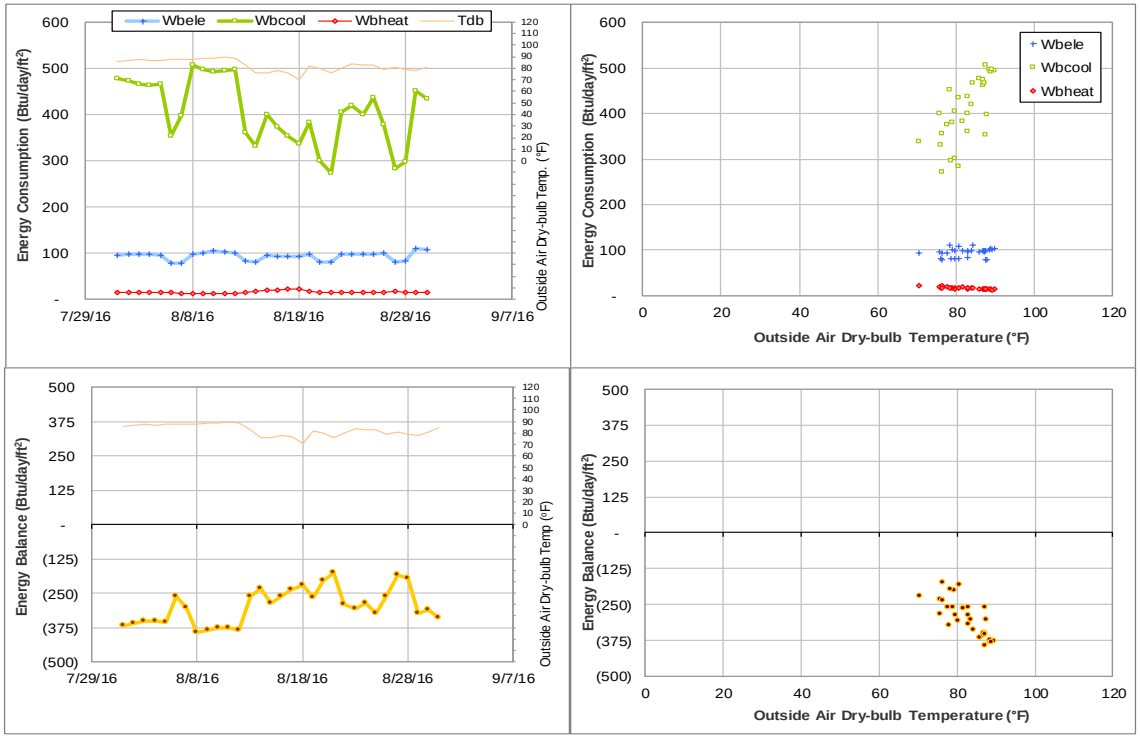


Figure IV-78 Psychology Building TAMU BLDG # 463 Energy Balance Plot during August 2016

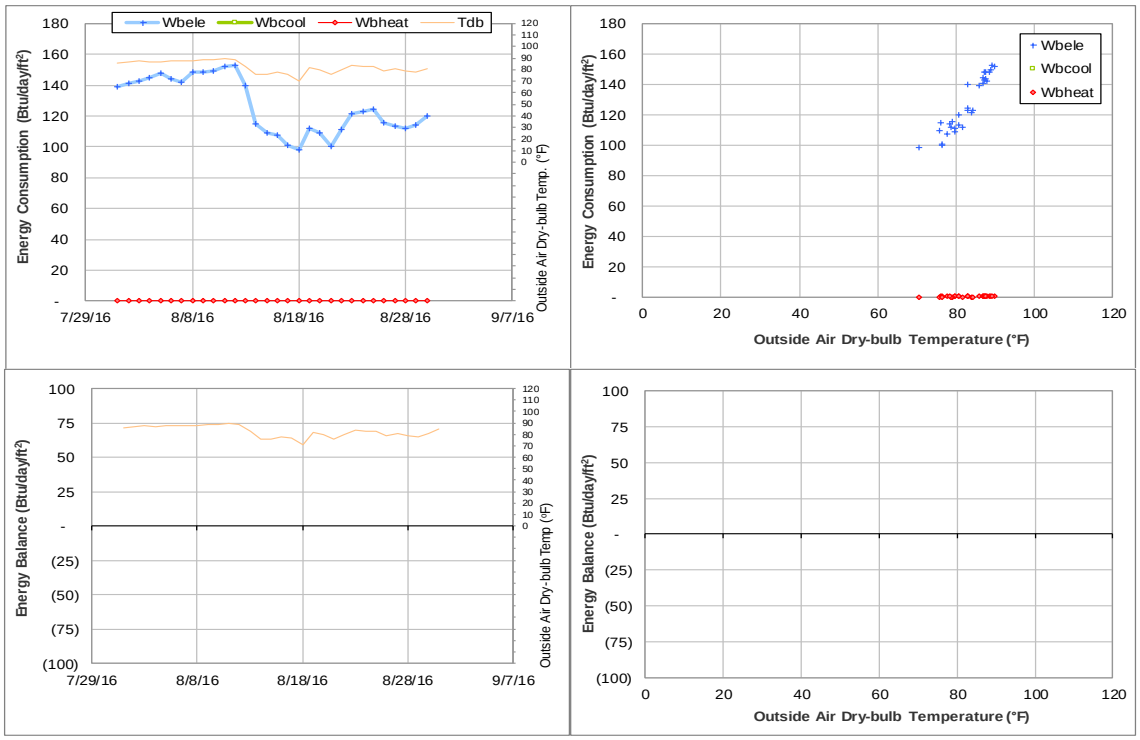


Figure IV-79 State Chemist Building TAMU BLDG # 464 Energy Balance Plot during August 2016

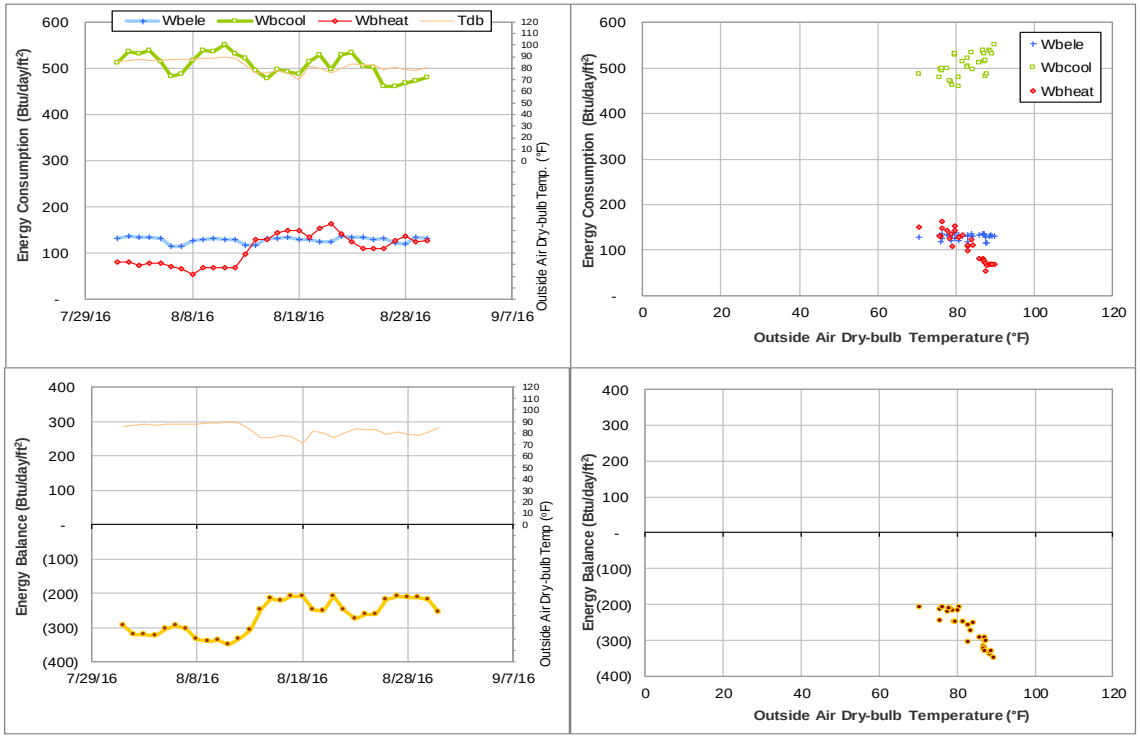


Figure IV-80 Butler Hall TAMU BLDG # 465 Energy Balance Plot during August 2016

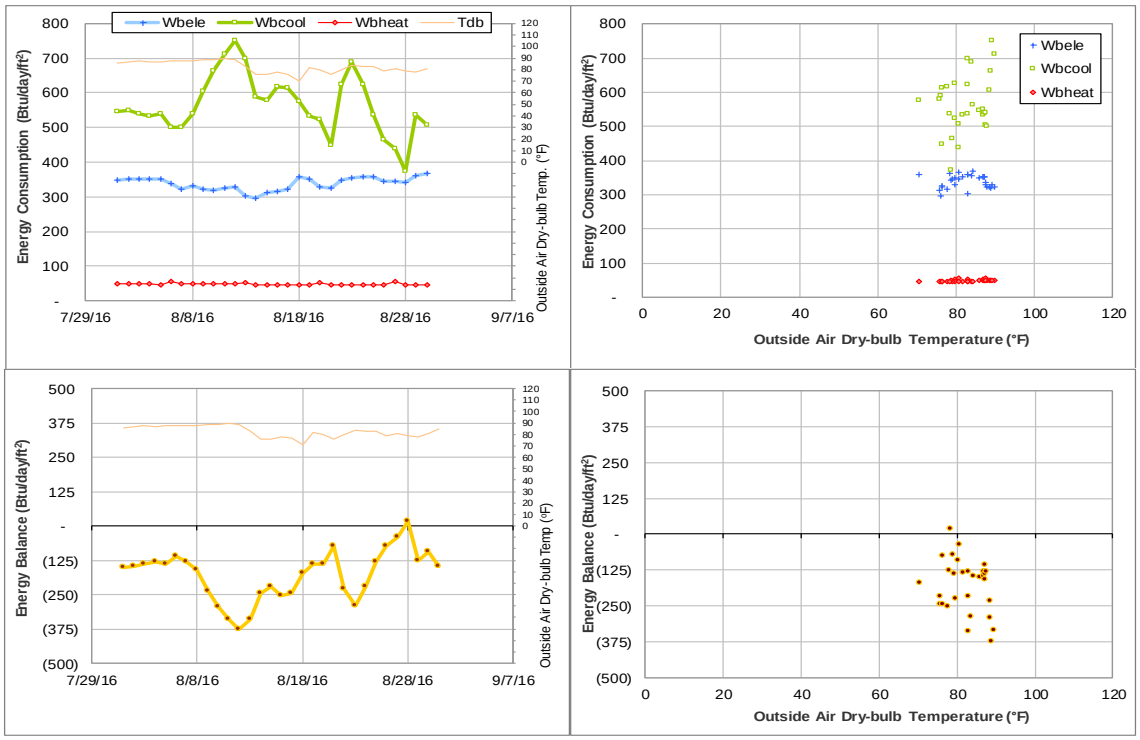


Figure IV-81 Biological Sciences Building - East TAMU BLDG # 467 Energy Balance Plot during August 2016

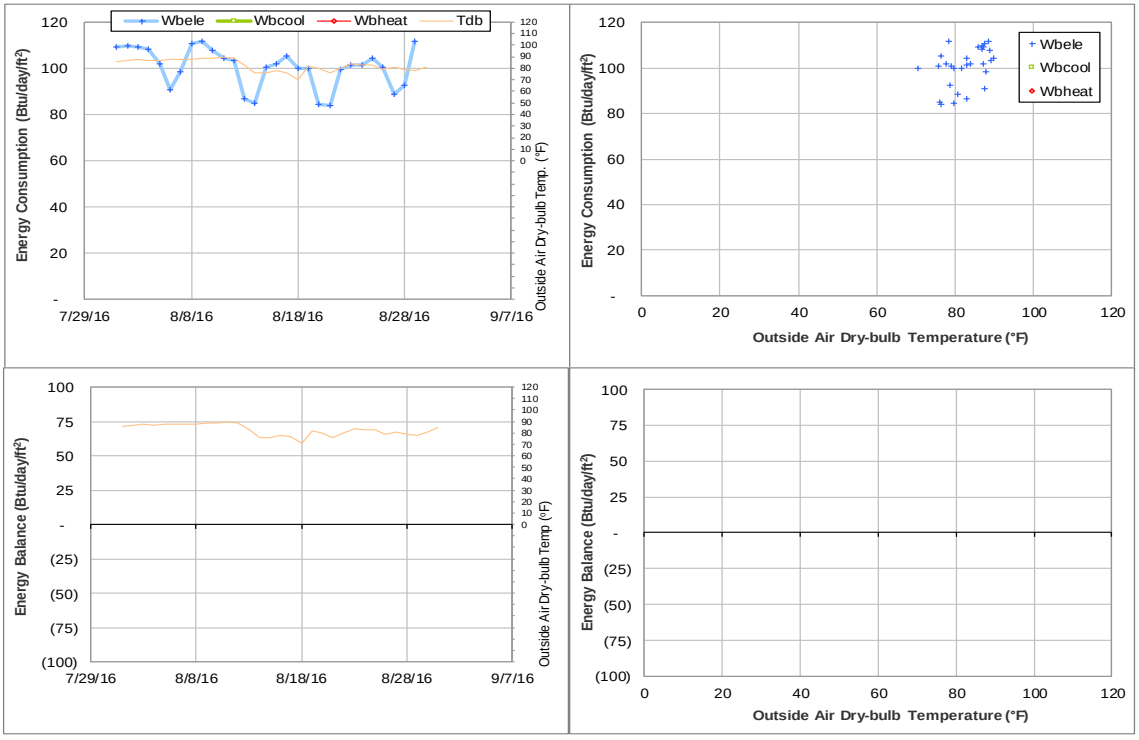


Figure IV-82 Evans Library TAMU BLDG # 468 Energy Balance Plot during August 2016

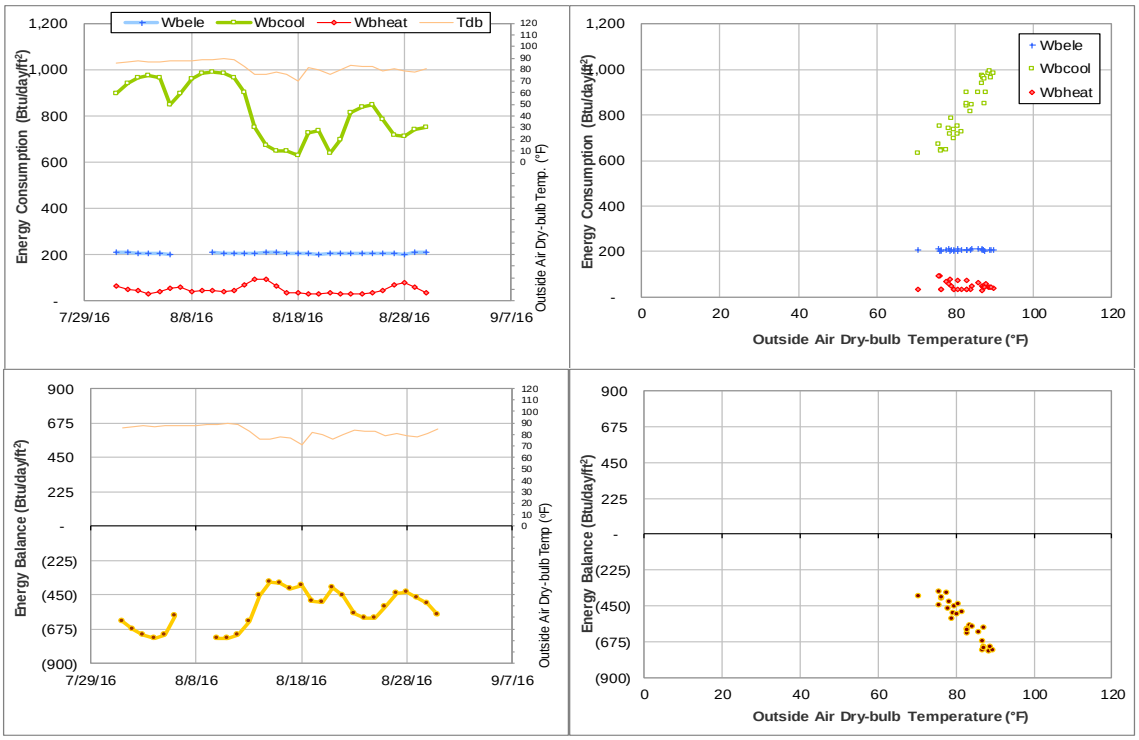


Figure IV-83 Central Campus Parking Garage TAMU BLDG # 469 Energy Balance Plot during August 2016

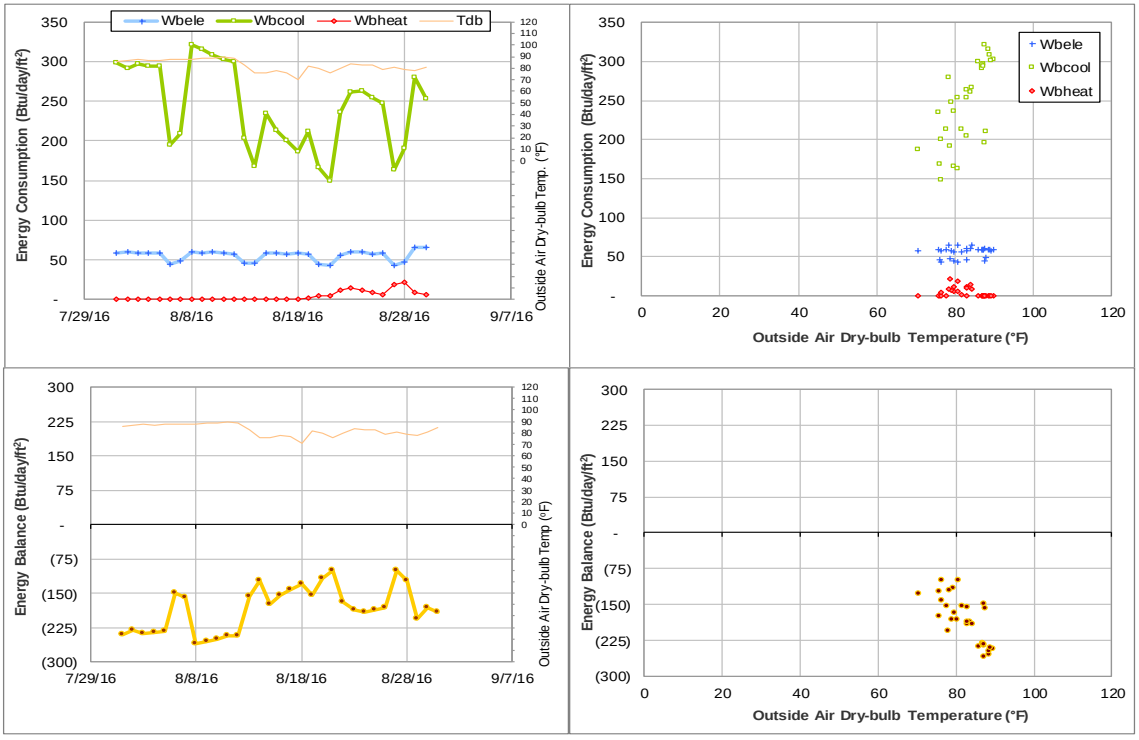


Figure IV-84 Glasscock History Bldg TAMU BLDG # 470 Energy Balance Plot during August 2016

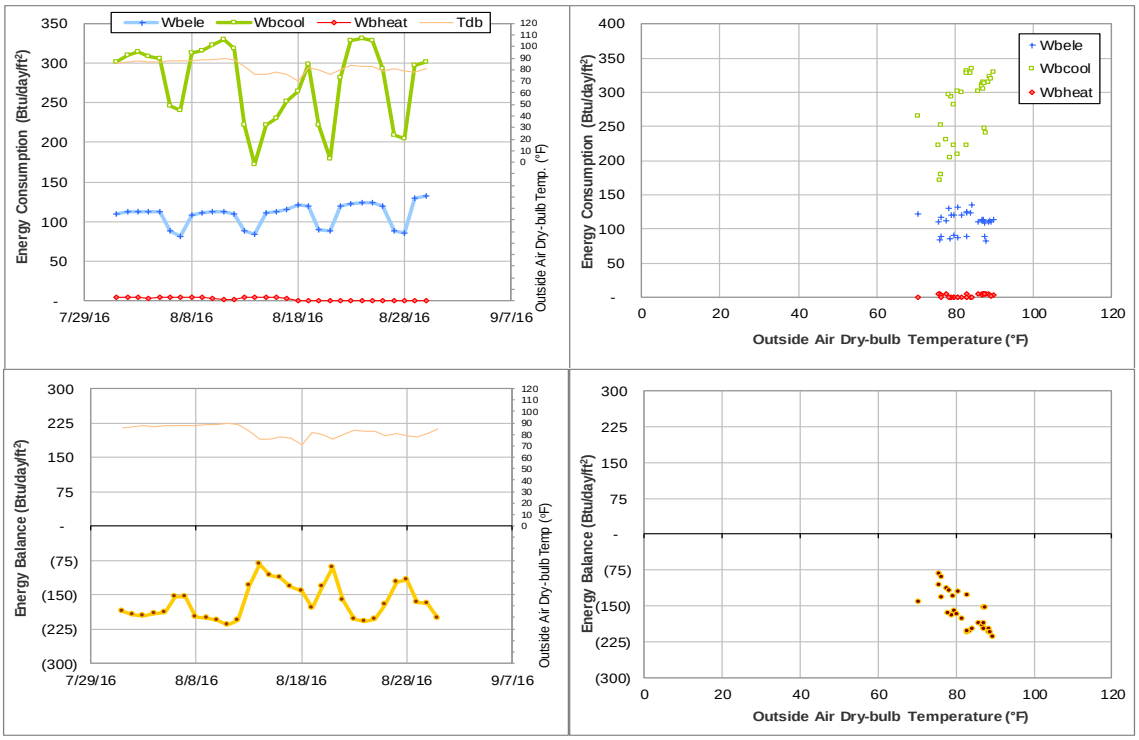


Figure IV-85 Pavilion TAMU BLDG # 471 Energy Balance Plot during August 2016

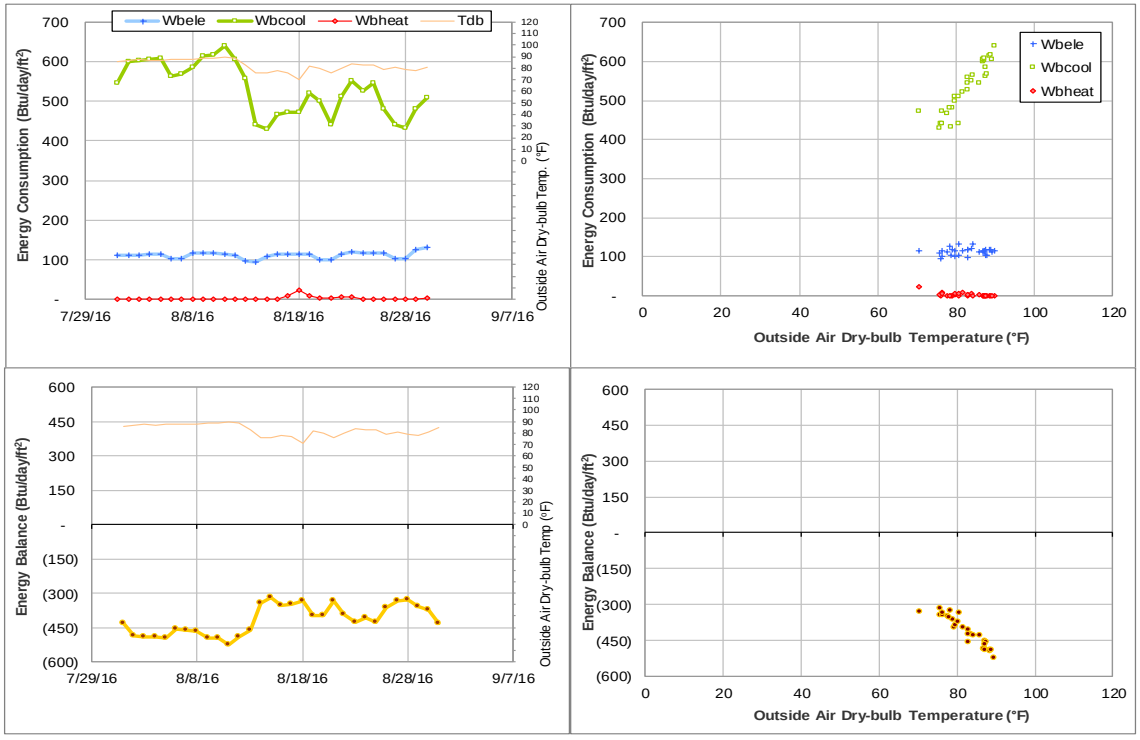


Figure IV-86 Animal Industries TAMU BLDG # 472 Energy Balance Plot during August 2016

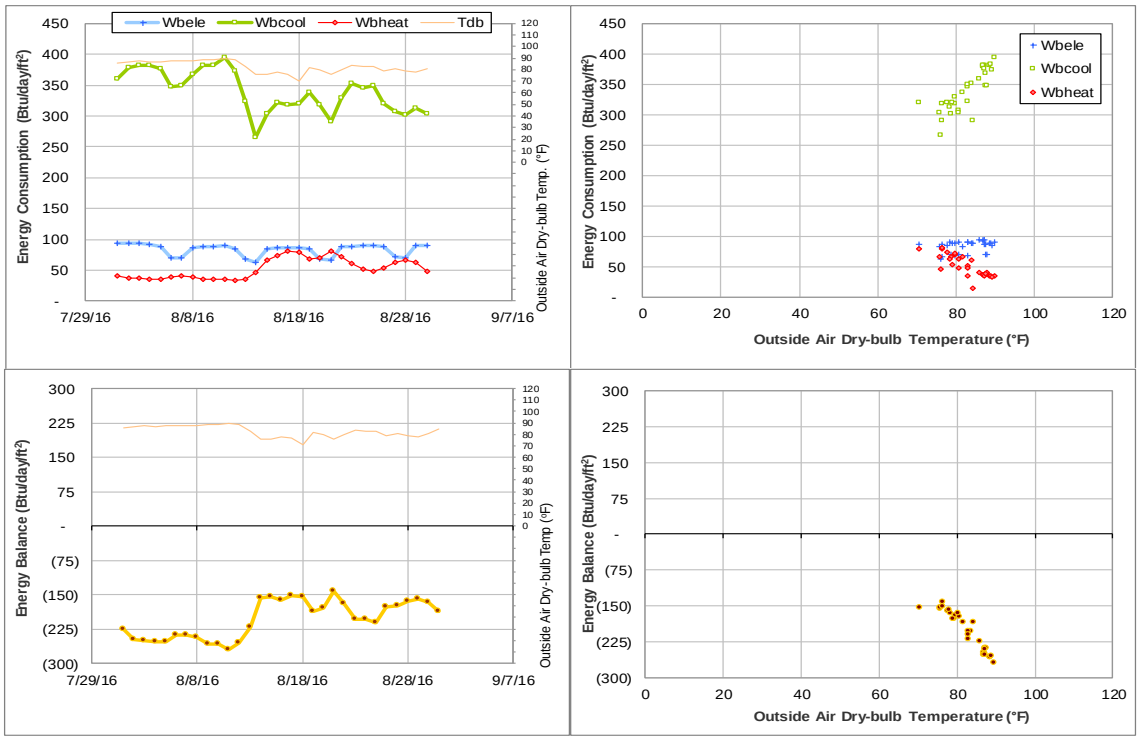


Figure IV-87 Williams Administration Building TAMU BLDG # 473 Energy Balance Plot during August 2016

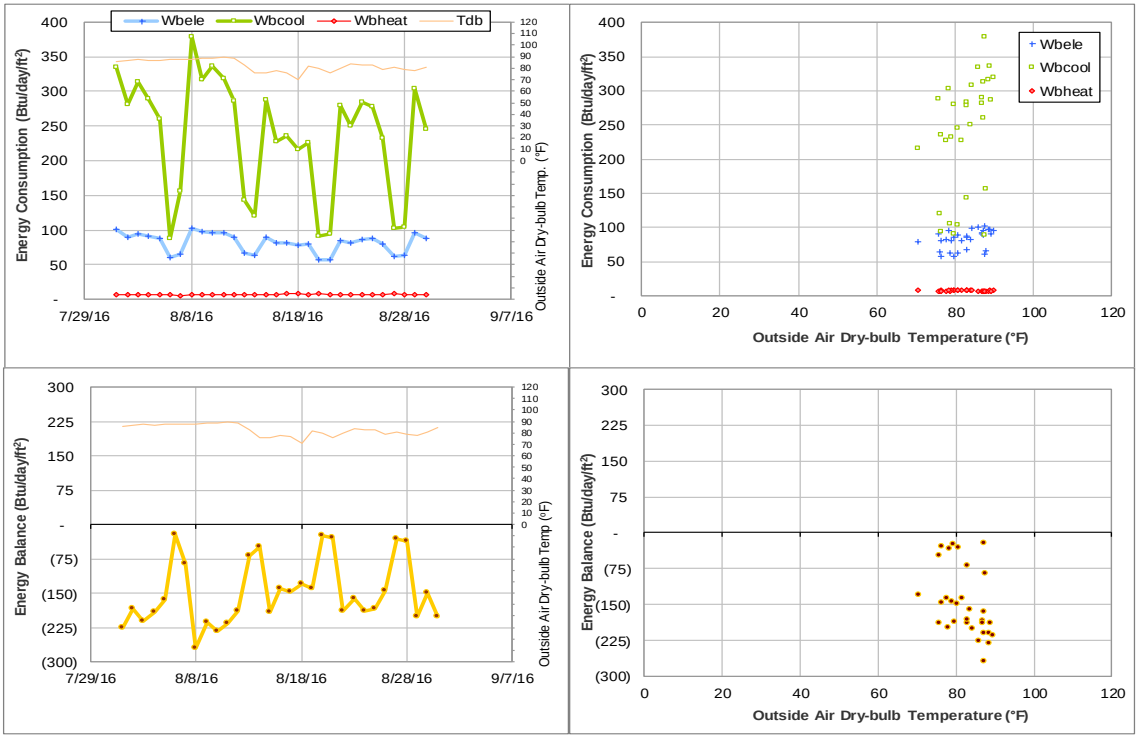


Figure IV-88 YMCA Building TAMU BLDG # 474 Energy Balance Plot during August 2016

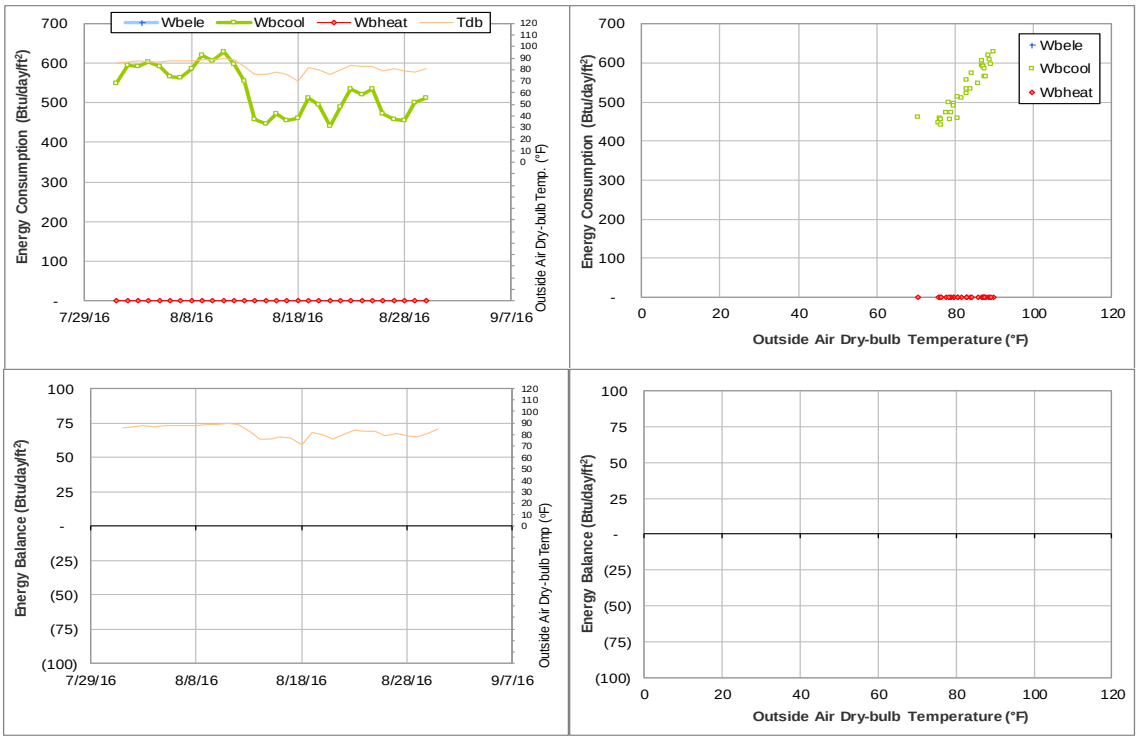


Figure IV-89 Francis Hall TAMU BLDG # 476 Energy Balance Plot during August 2016

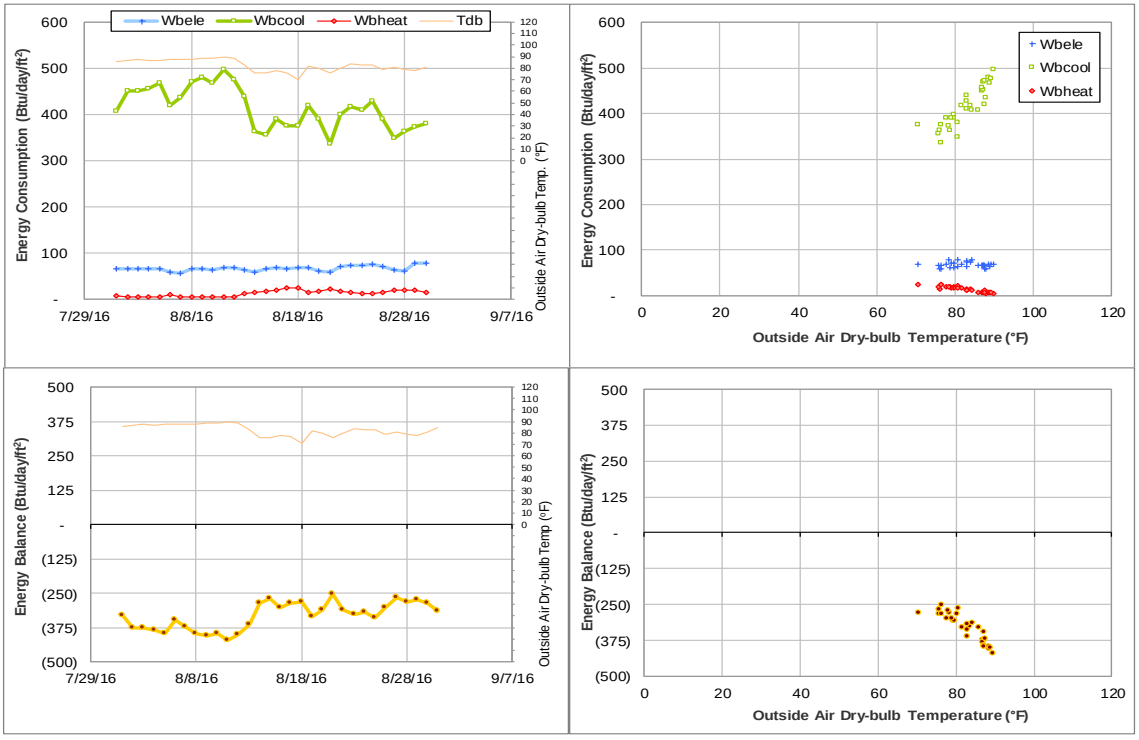


Figure IV-90 Anthropology Building TAMU BLDG # 477 Energy Balance Plot during August 2016

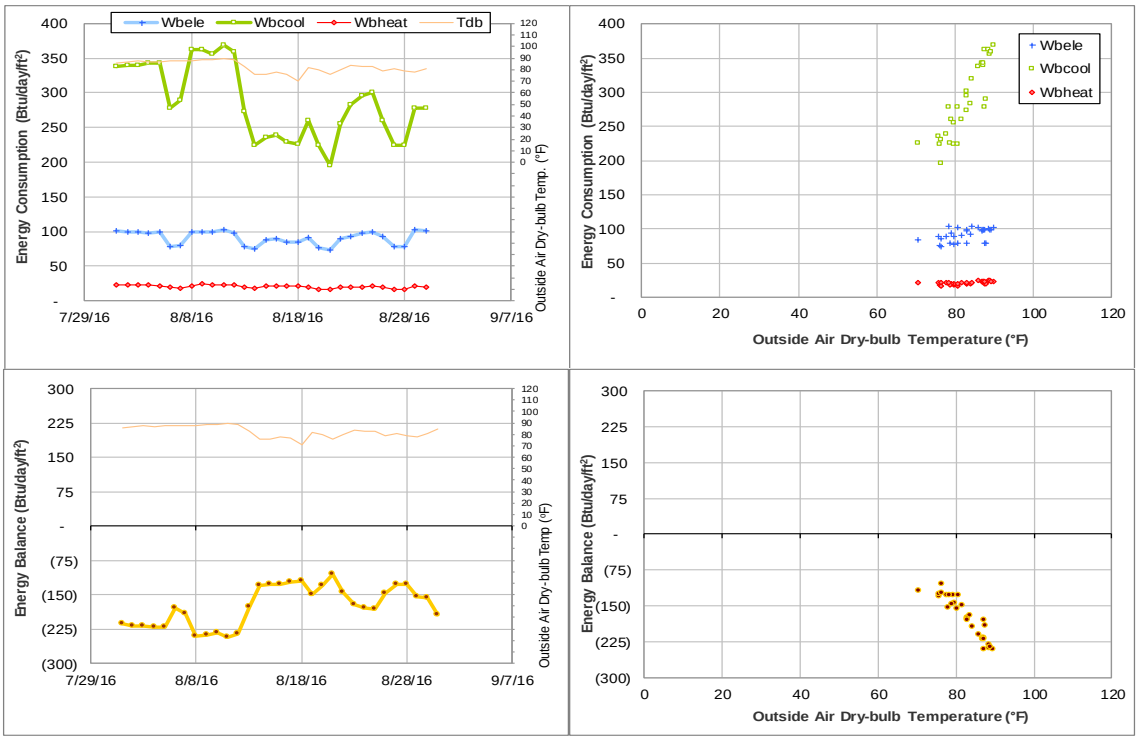


Figure IV-91 Scoates Hall TAMU BLDG # 478 Energy Balance Plot during August 2016

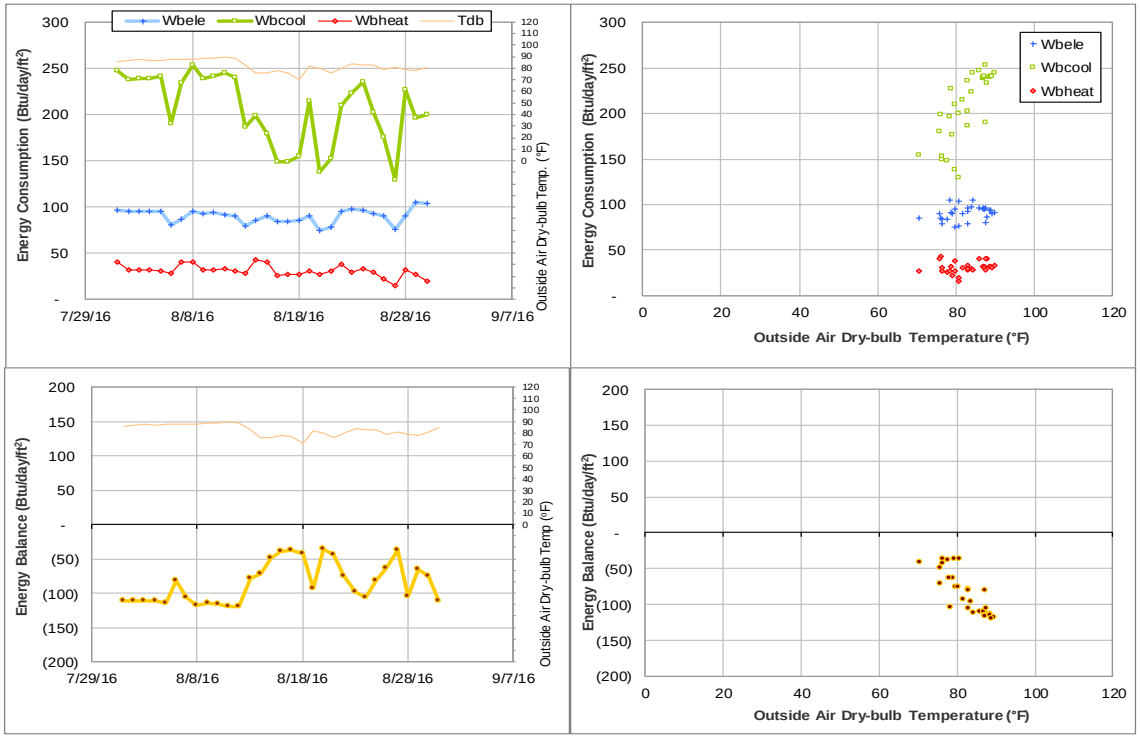


Figure IV-92 Bolton Hall TAMU BLDG # 480 Energy Balance Plot during August 2016

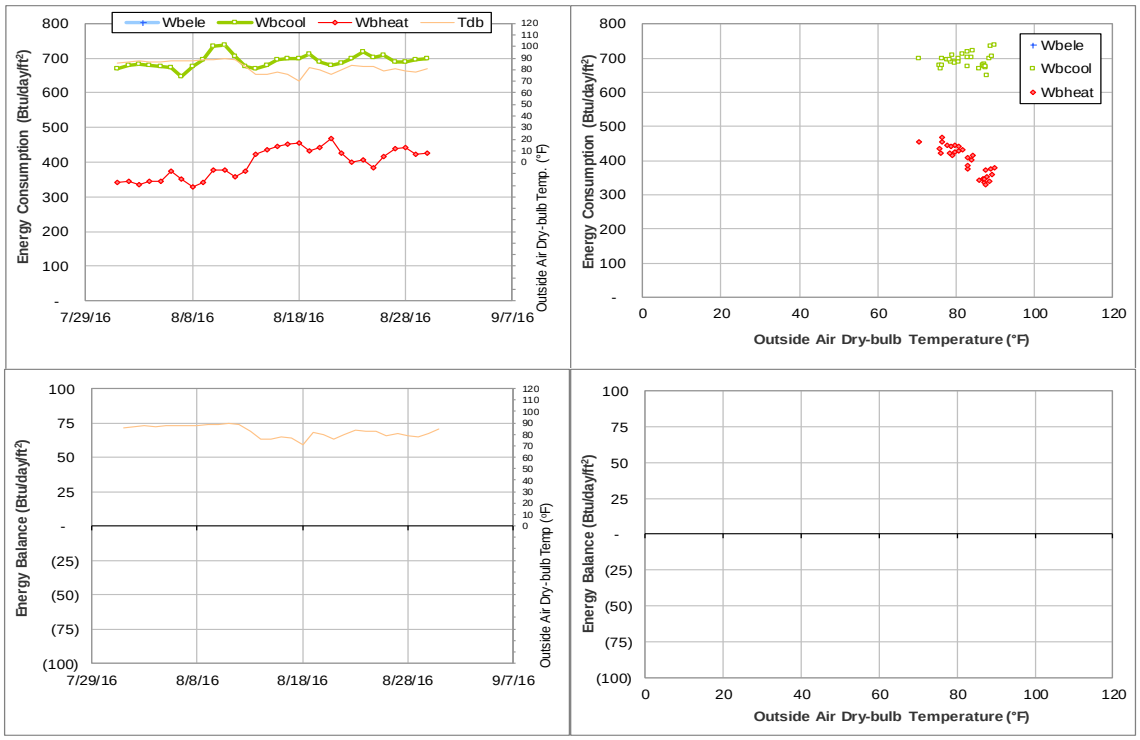


Figure IV-93 Heaton Hall TAMU BLDG # 481 Energy Balance Plot during August 2016

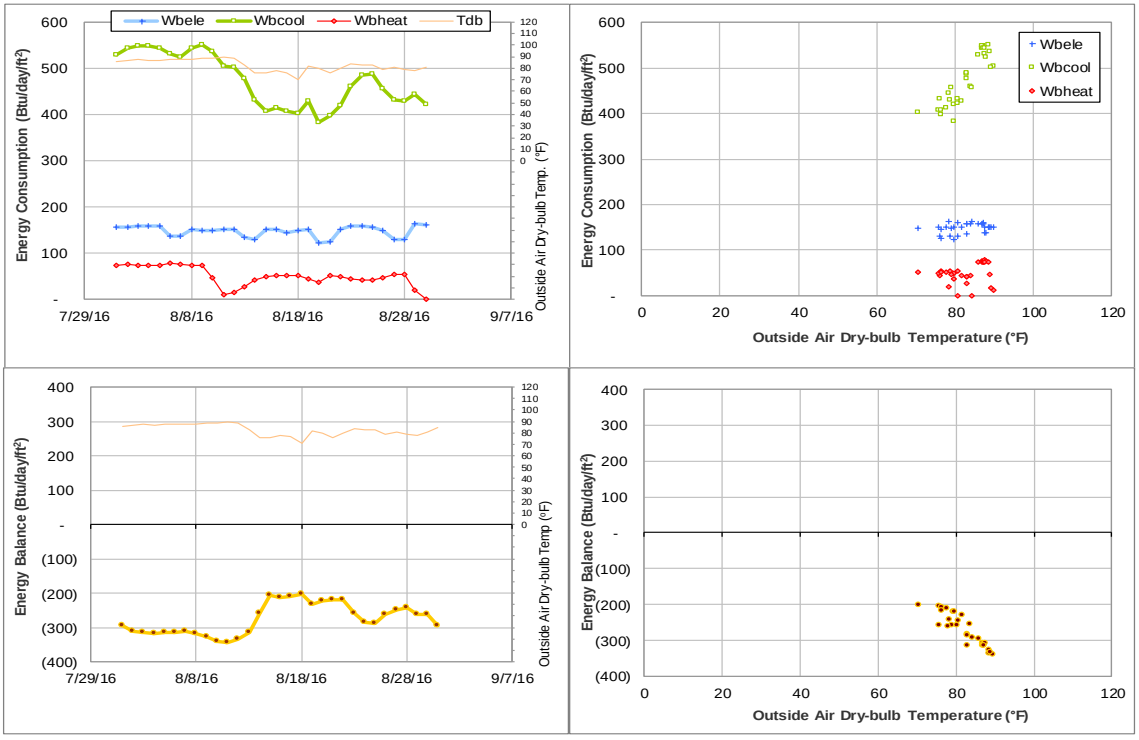


Figure IV-94 Fermier Hall TAMU BLDG # 482 Energy Balance Plot during August 2016

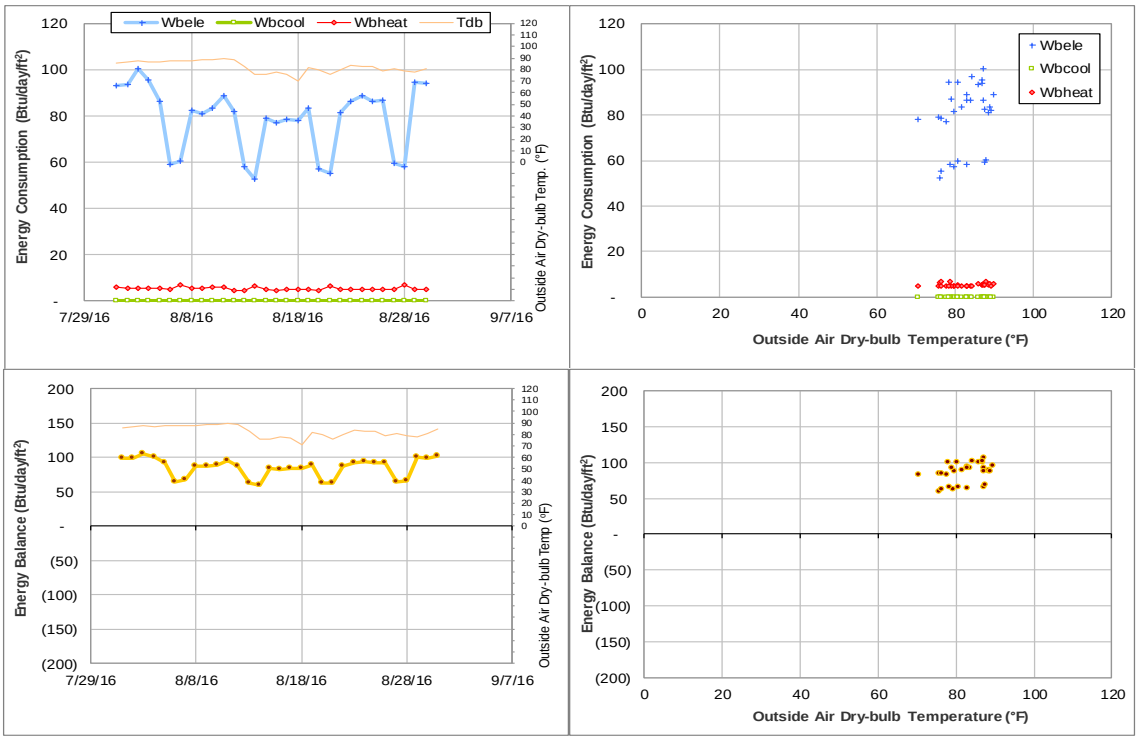


Figure IV-95 Thompson Hall TAMU BLDG # 483 Energy Balance Plot during August 2016

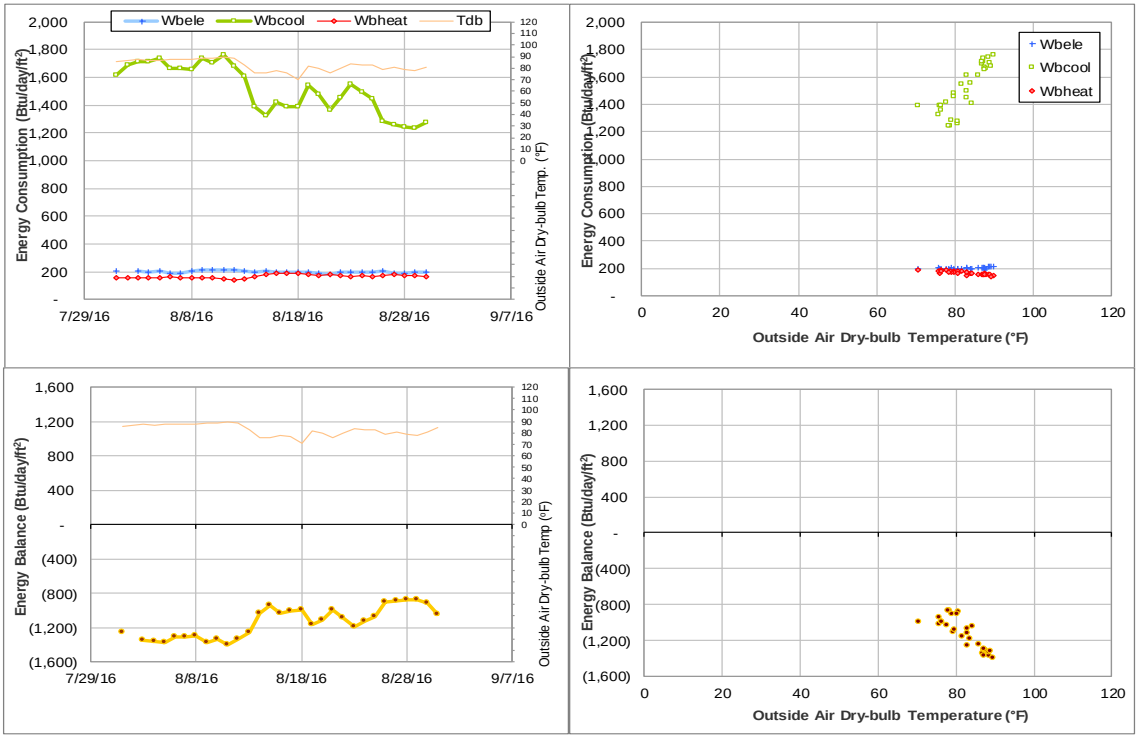


Figure IV-96 Chemistry Building TAMU BLDG # 484 Energy Balance Plot during August 2016

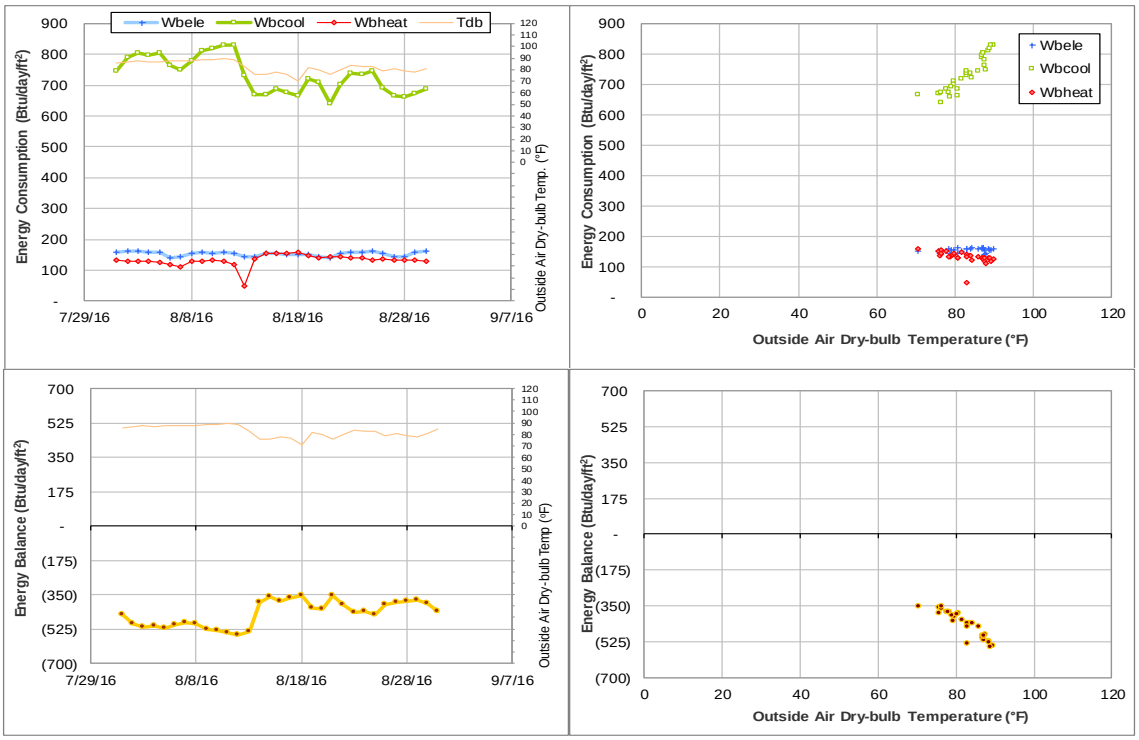


Figure IV-97 Halbouty Geosciences Building TAMU BLDG # 490 Energy Balance Plot during August 2016

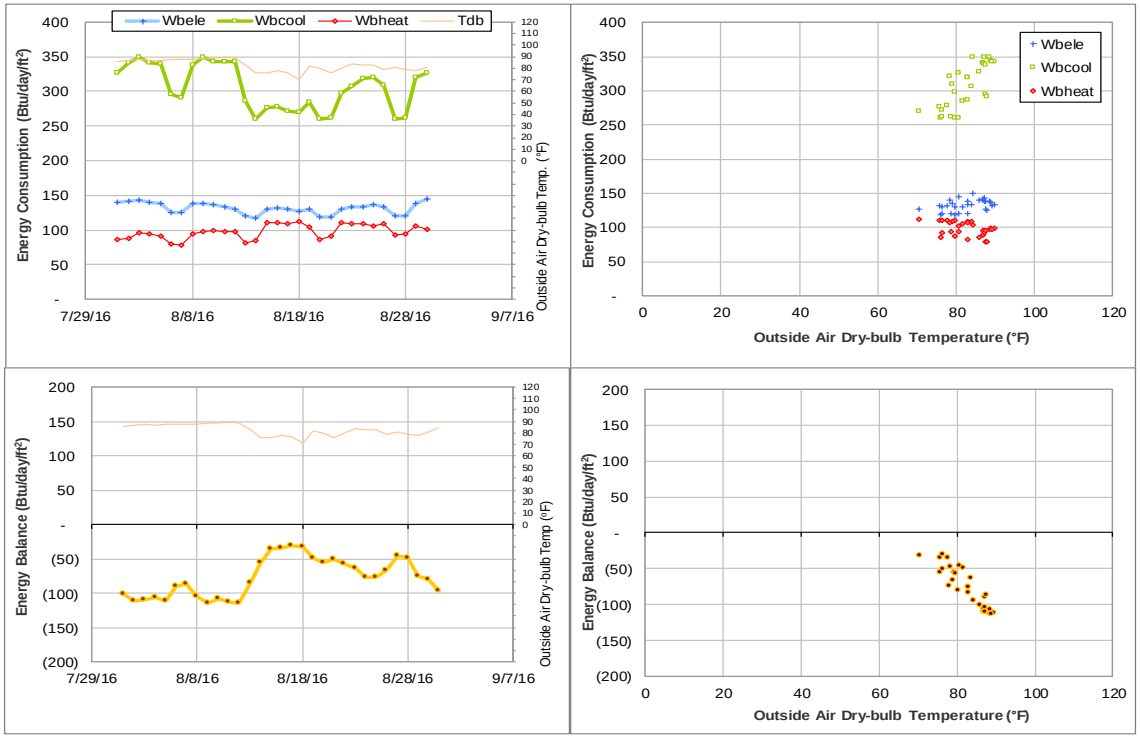


Figure IV-98 Civil Engineering Building TAMU BLDG # 492 Energy Balance Plot during August 2016

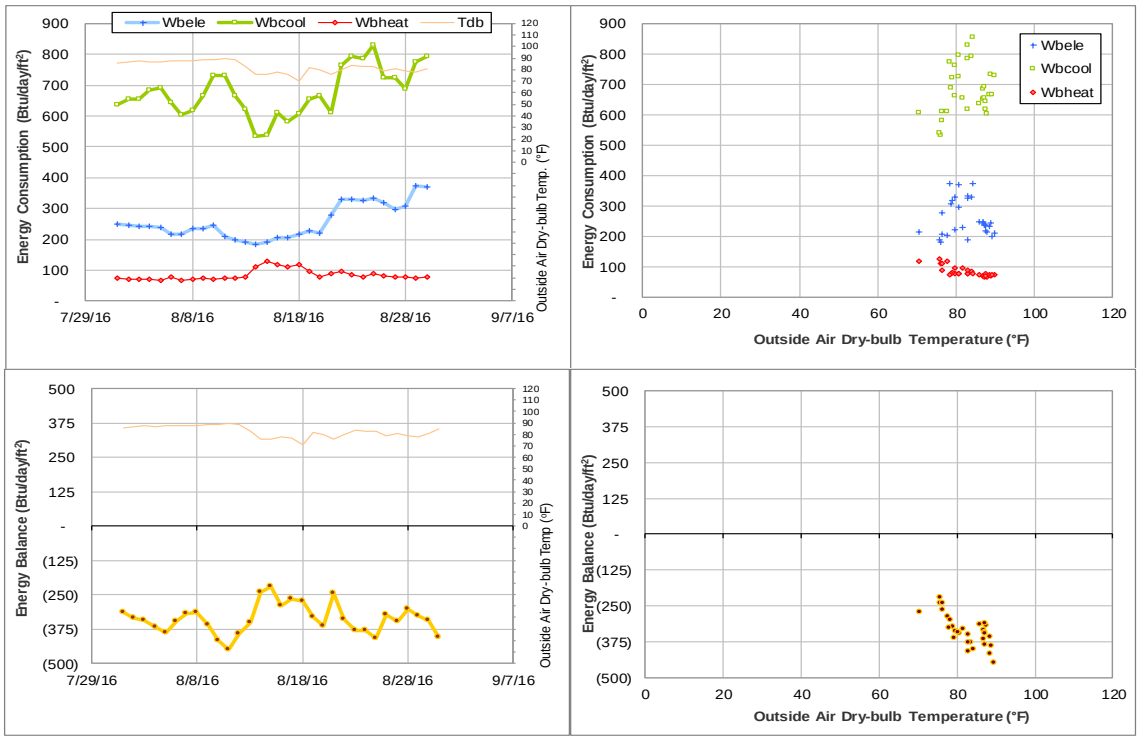


Figure IV-99 Sbisa Dining Hall TAMU BLDG # 495 Energy Balance Plot during August 2016

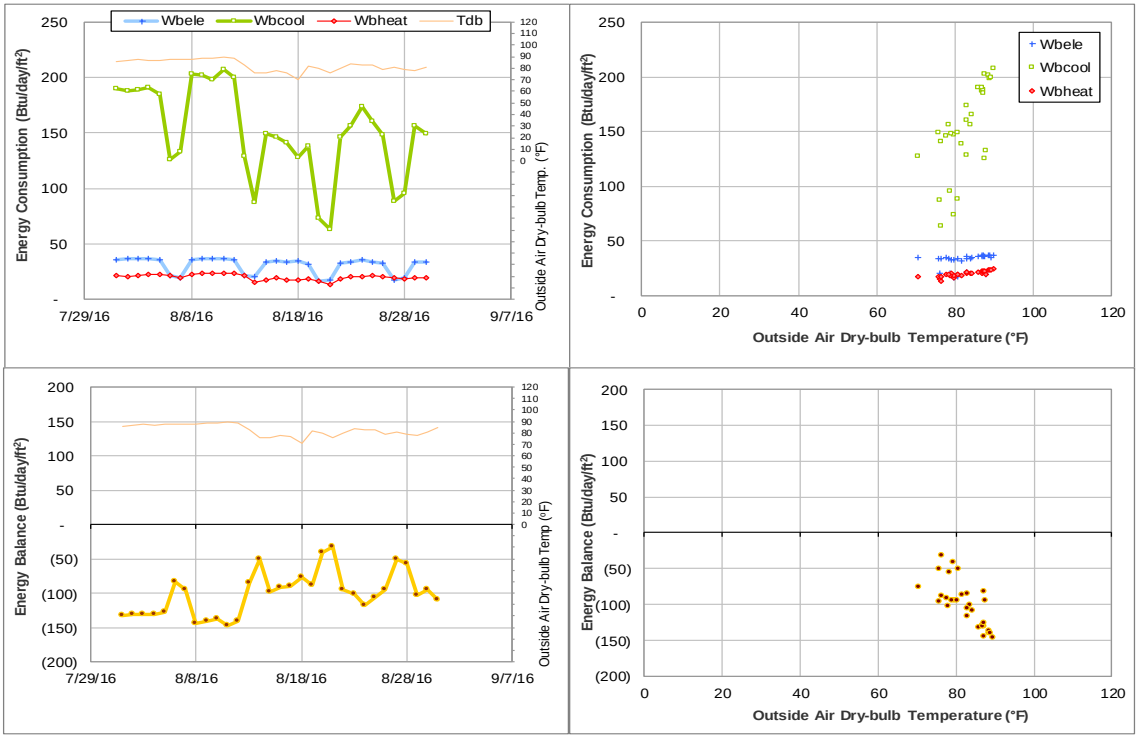


Figure IV-100 Utilities & Energy Services Central Office TAMU BLDG # 496 Energy Balance Plot during August 2016

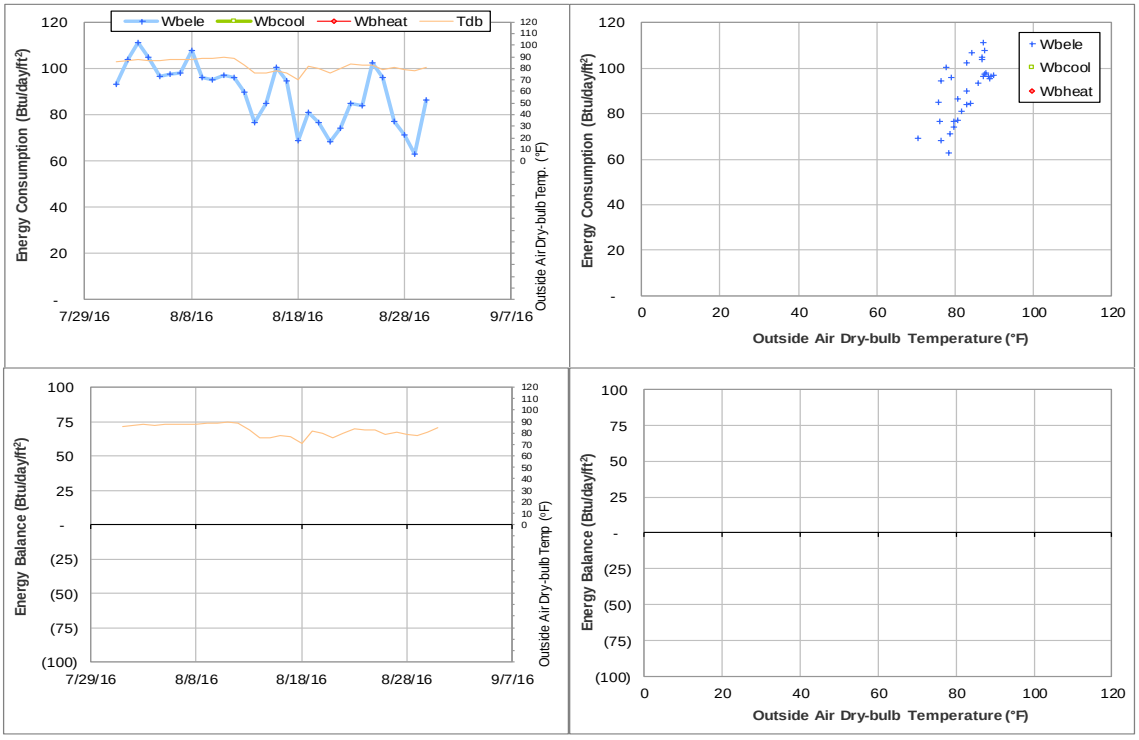


Figure IV-101 Concrete Materials Laboratory TAMU BLDG # 501 Energy Balance Plot during August 2016

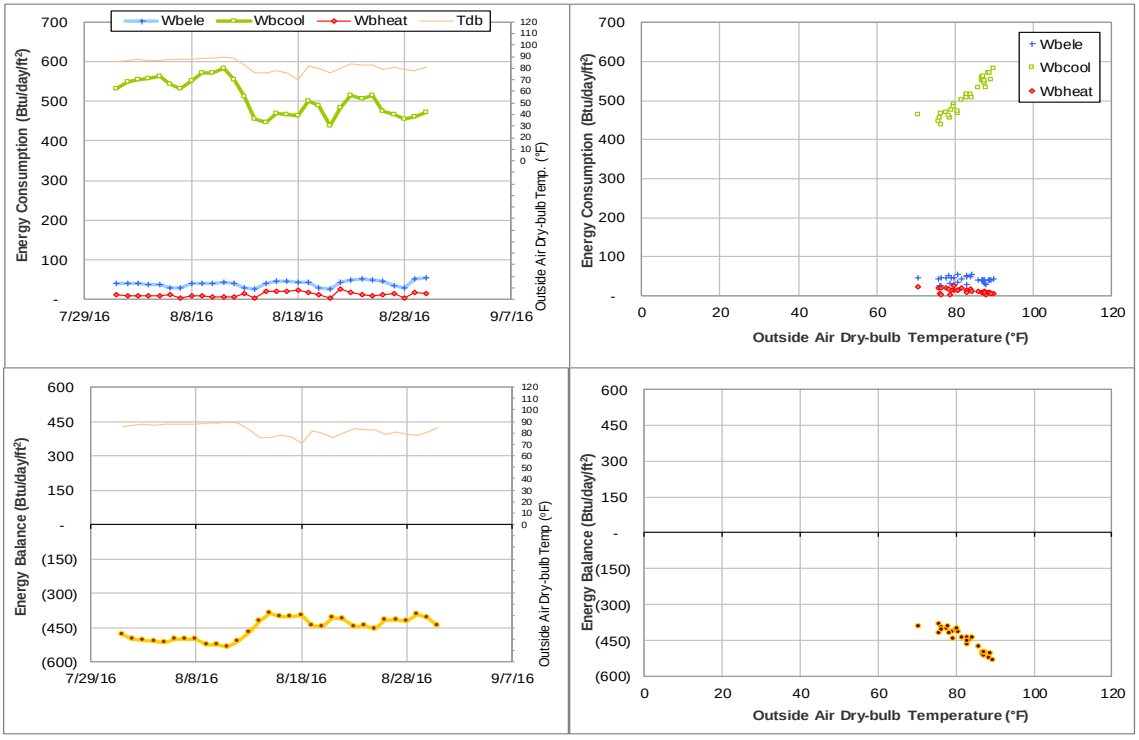


Figure IV-102 Nagle Hall TAMU BLDG # 506 Energy Balance Plot during August 2016

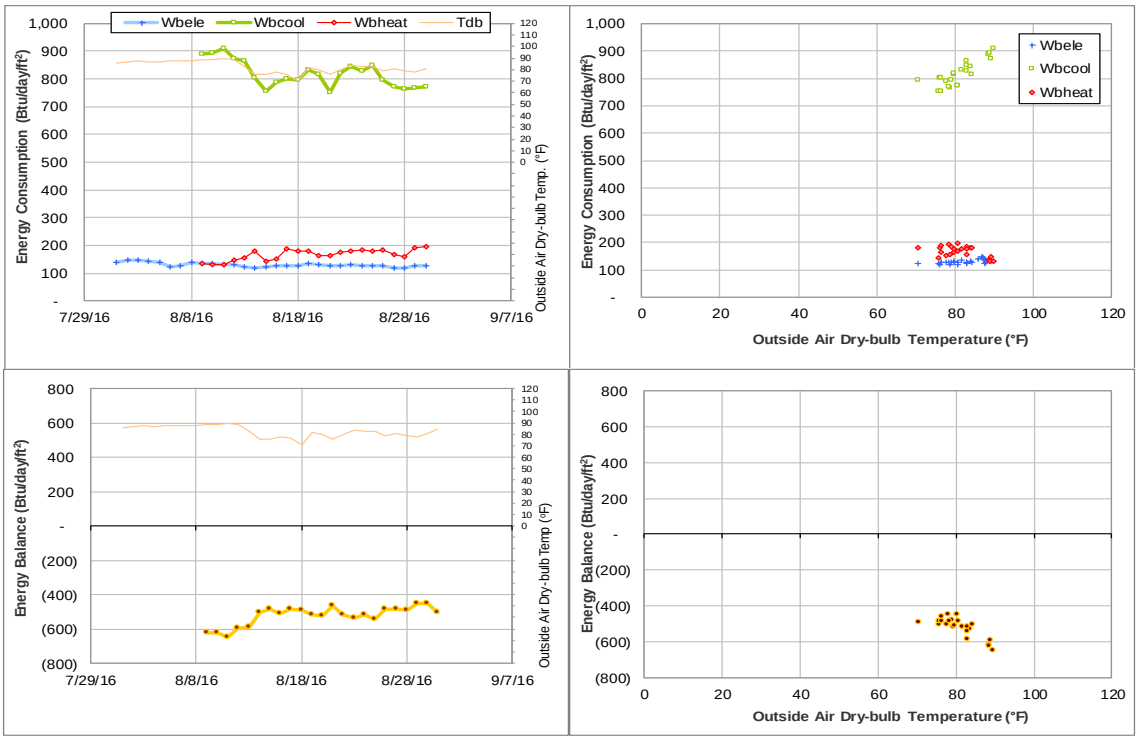


Figure IV-103 Veterinary Medical Science Building TAMU BLDG # 507 Energy Balance Plot during August 2016

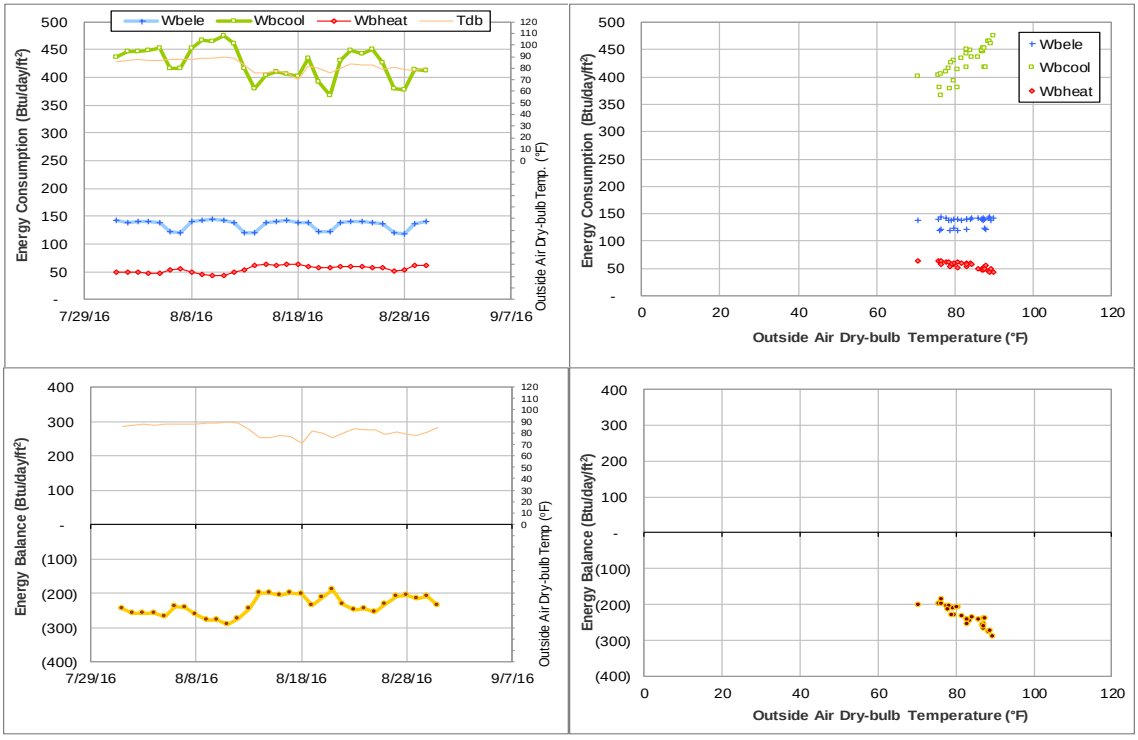


Figure IV-104 Veterinary Teaching Hospital and Med Adm TAMU BLDG # 508-1026 Energy Balance Plot during August 2016

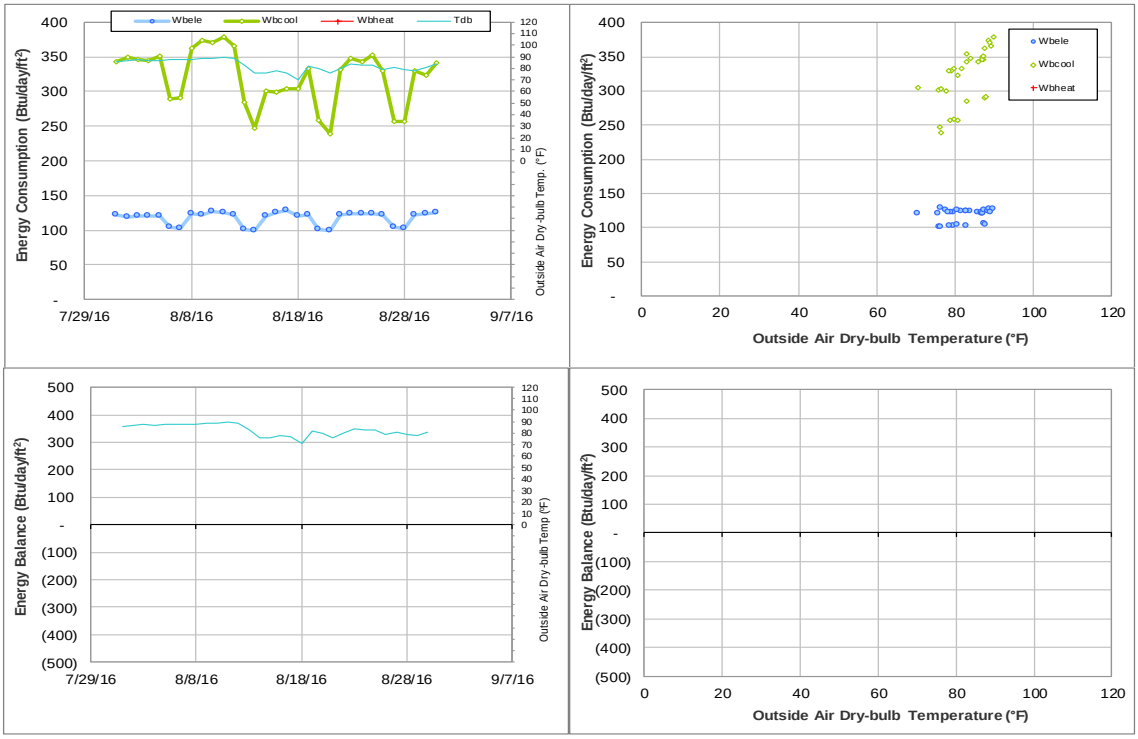


Figure IV-105 Veterinary Teaching Hospital TAMU BLDG # 508 Energy Balance Plot during August 2016

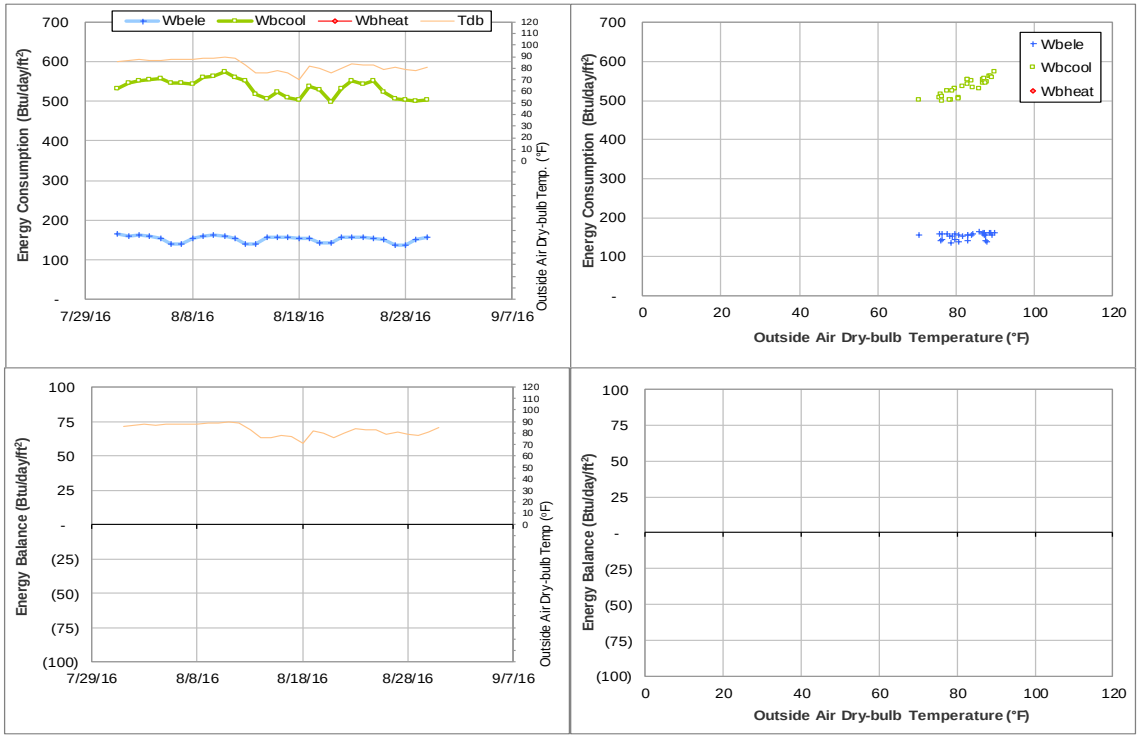


Figure IV-106 Veterinary Medicine Administration TAMU BLDG # 1026 Energy Balance Plot during August 2016

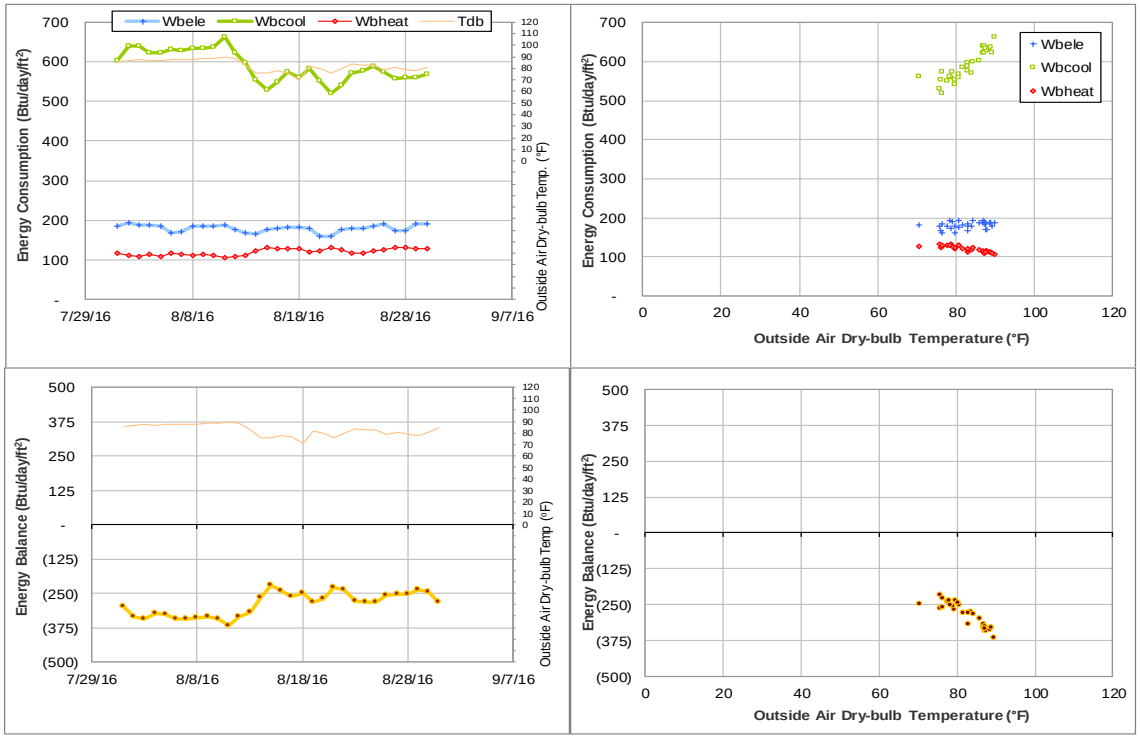


Figure IV-107 Heep Laboratory Building TAMU BLDG # 511 Energy Balance Plot during August 2016

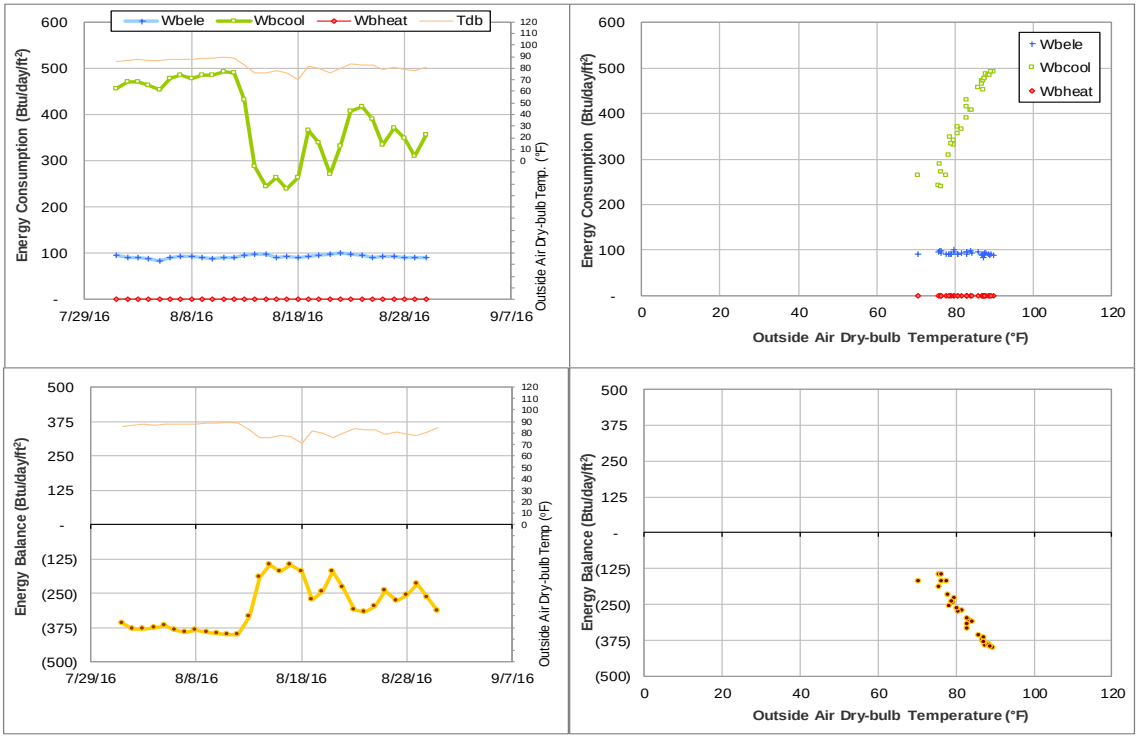


Figure IV-108 All Faiths Chapel TAMU BLDG # 512 Energy Balance Plot during August 2016

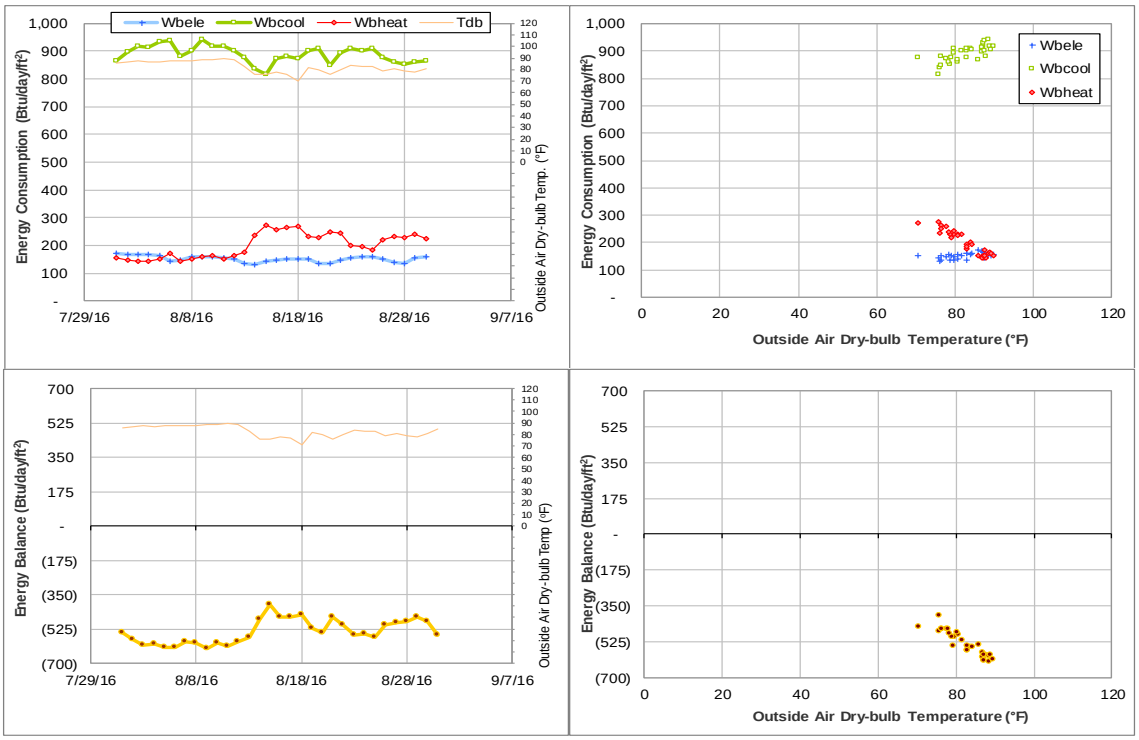


Figure IV-109 Doherty Building TAMU BLDG # 513 Energy Balance Plot during August 2016

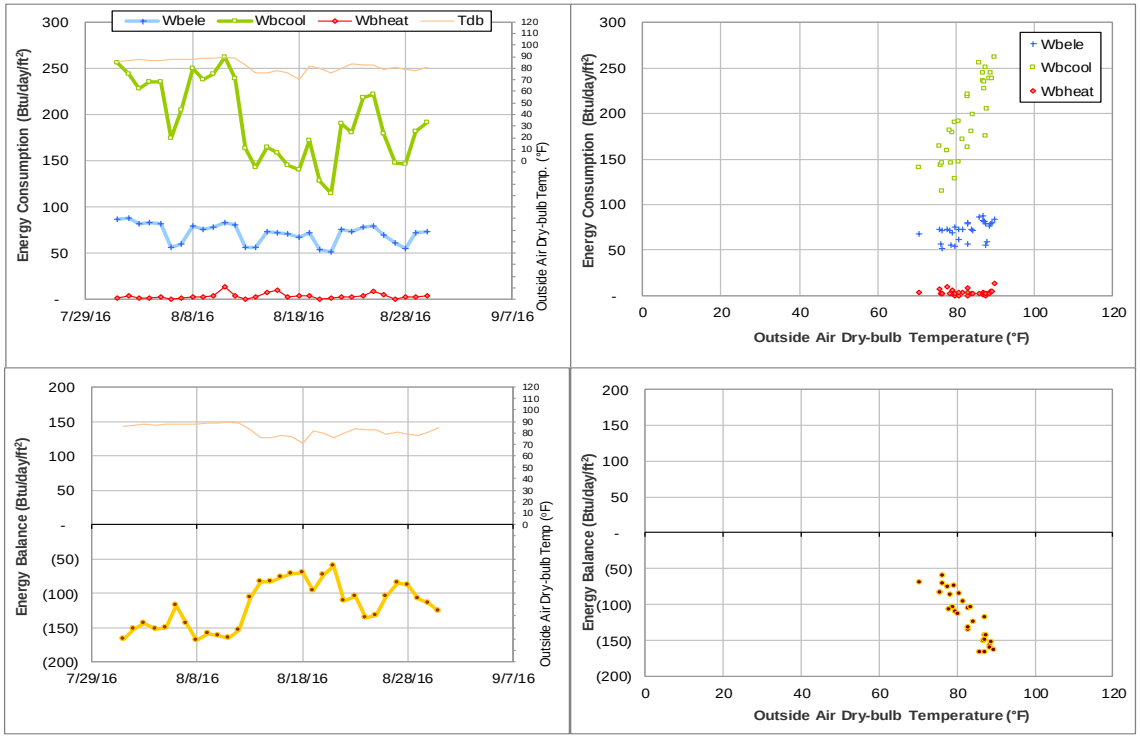


Figure IV-110 Munnerlyn Astronomy & Space Sciences Engineering TAMU BLDG # 514 Energy Balance Plot during August 2016

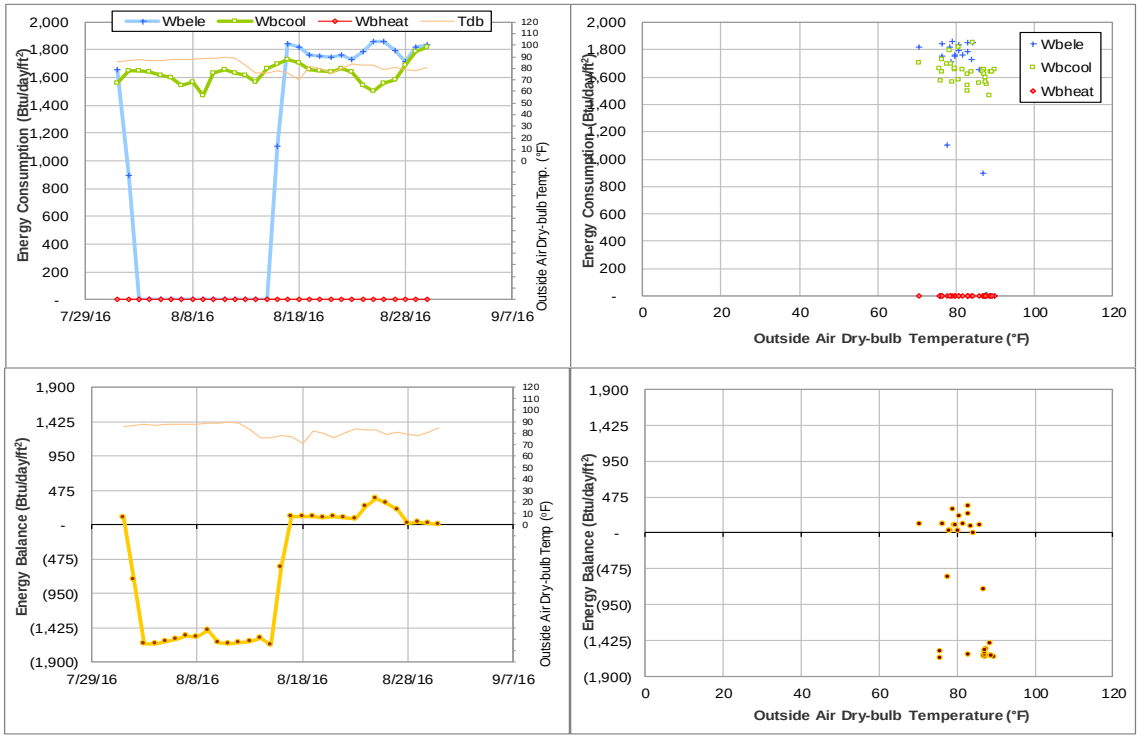


Figure IV-111 Computing Services Center TAMU BLDG # 516 Energy Balance Plot during August 2016

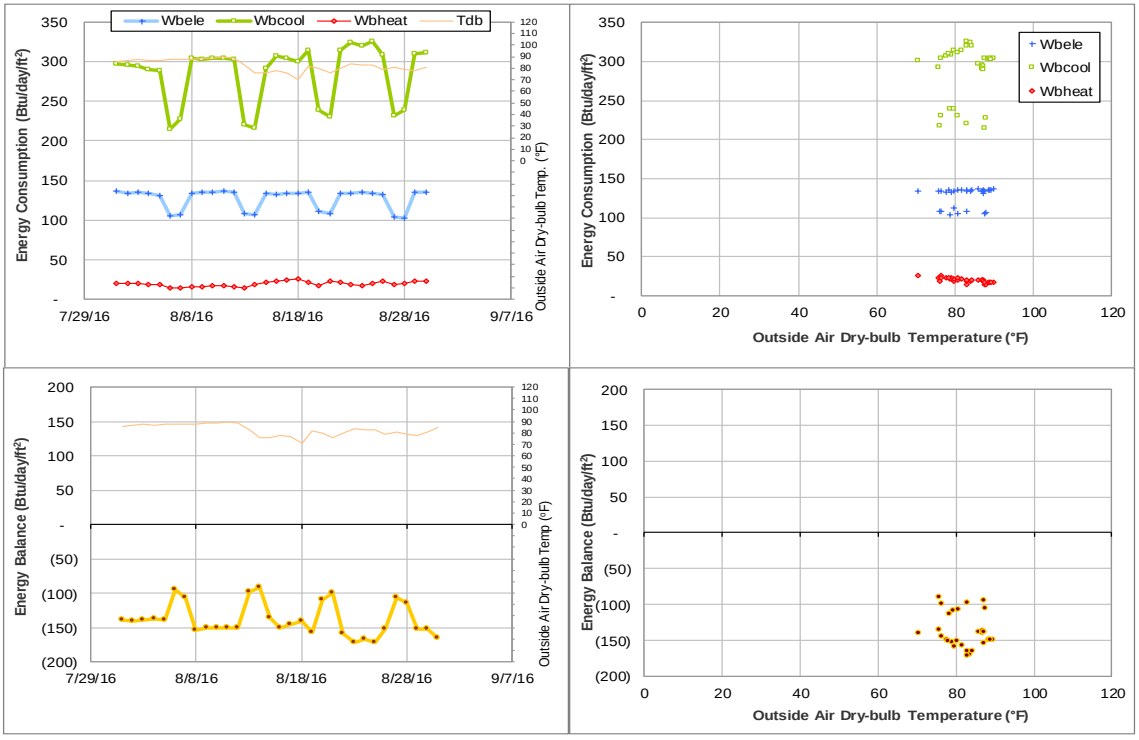


Figure IV-112 Beutel Health Center TAMU BLDG # 520 Energy Balance Plot during August 2016

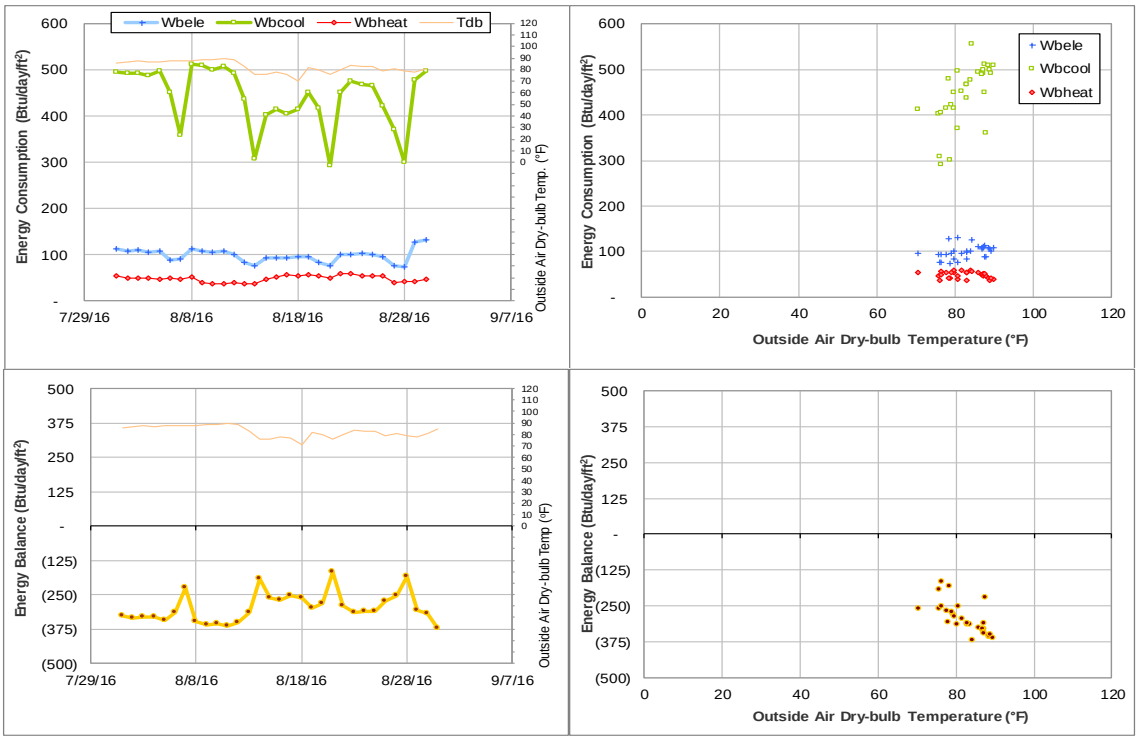


Figure IV-113 Heldenfels Hall TAMU BLDG # 521 Energy Balance Plot during August 2016

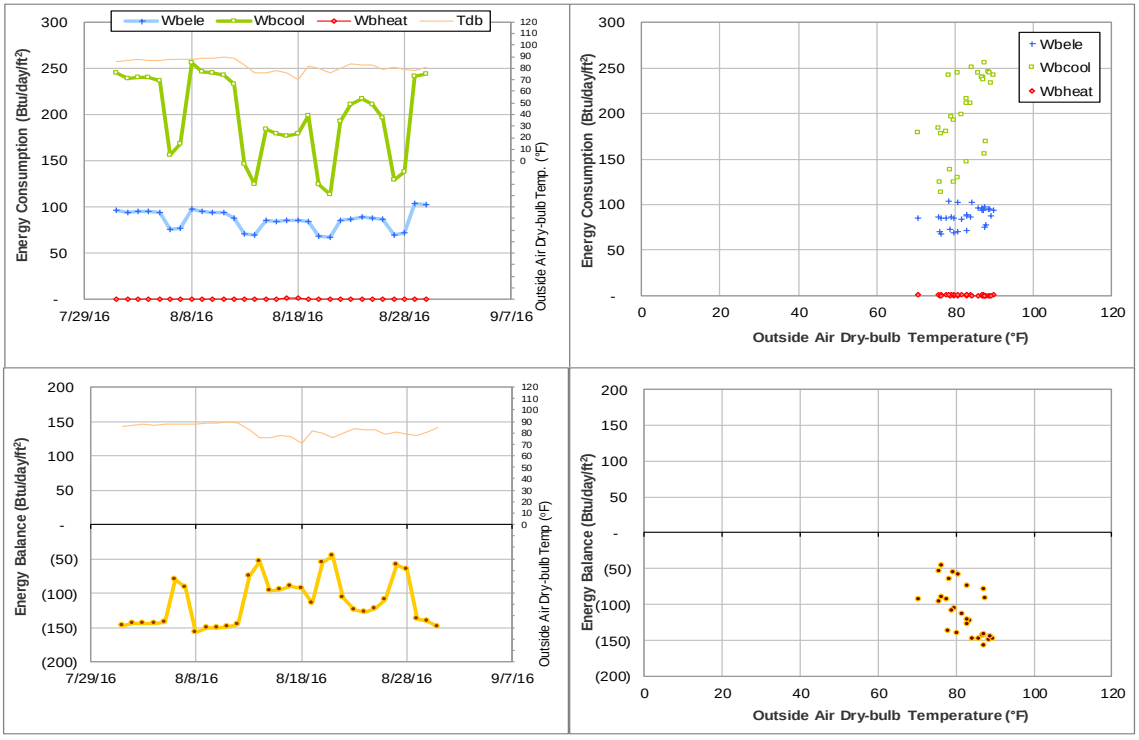


Figure IV-114 Blocker building TAMU BLDG # 524 Energy Balance Plot during August 2016

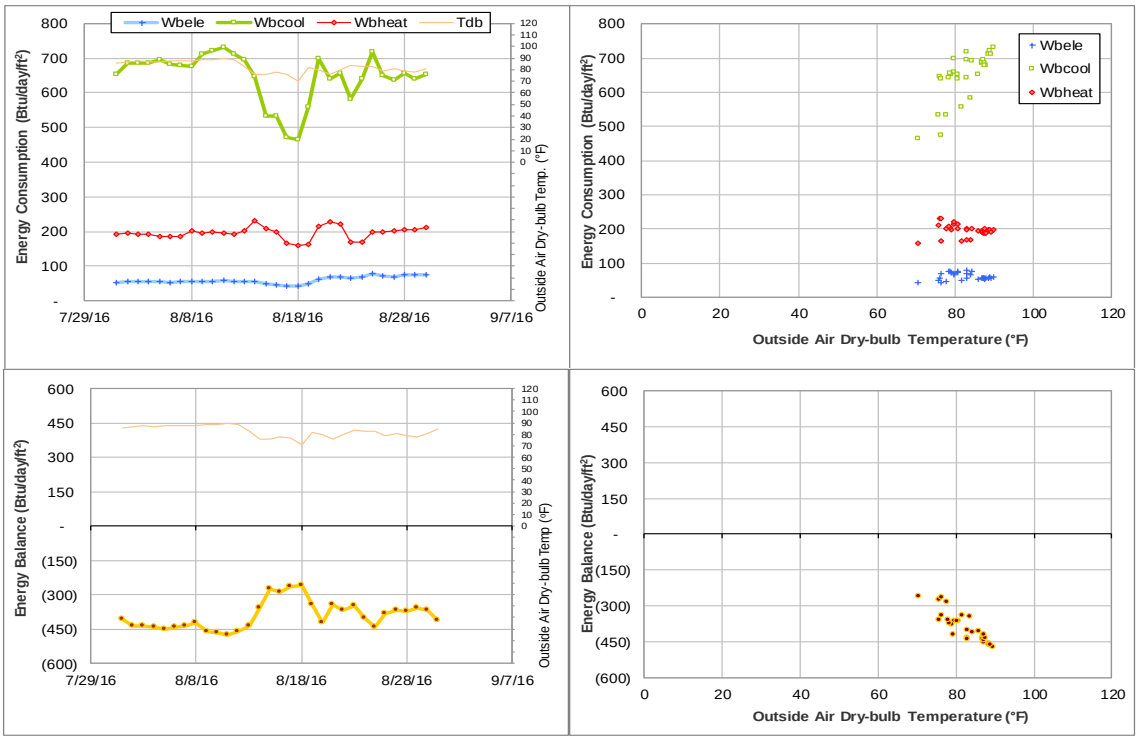


Figure IV-115 Clements Residence Hall TAMU BLDG # 548 Energy Balance Plot during August 2016

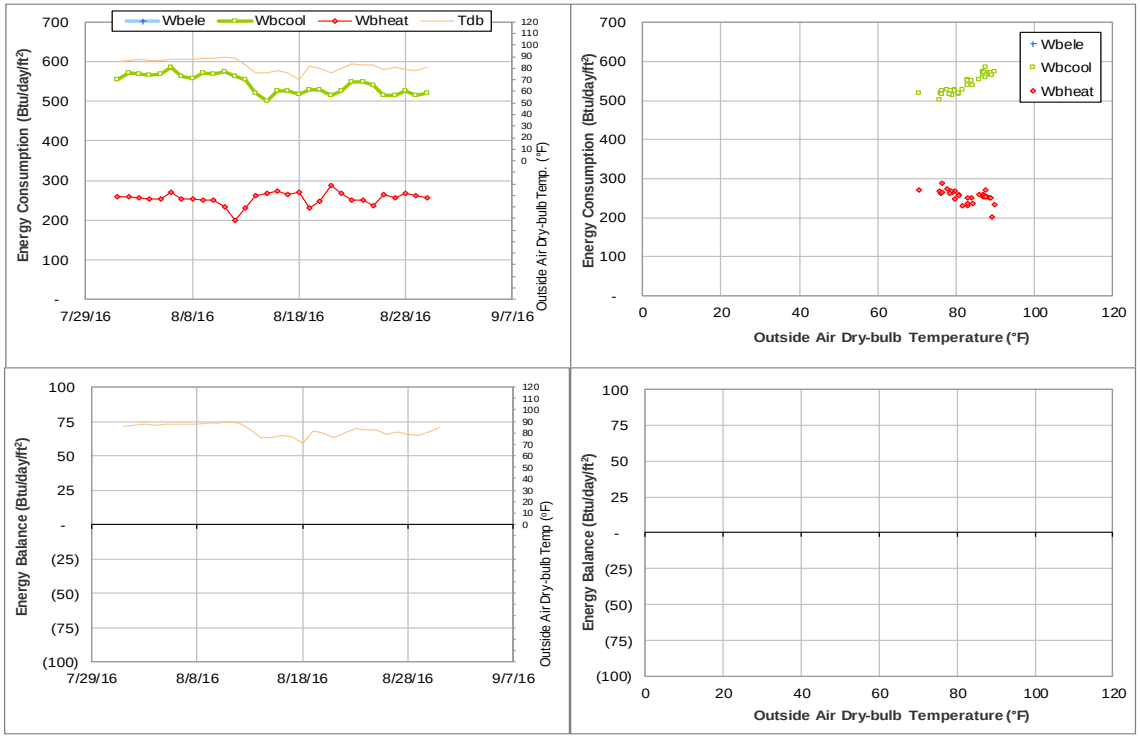


Figure IV-116 Haas Residence Hall TAMU BLDG # 549 Energy Balance Plot during August 2016

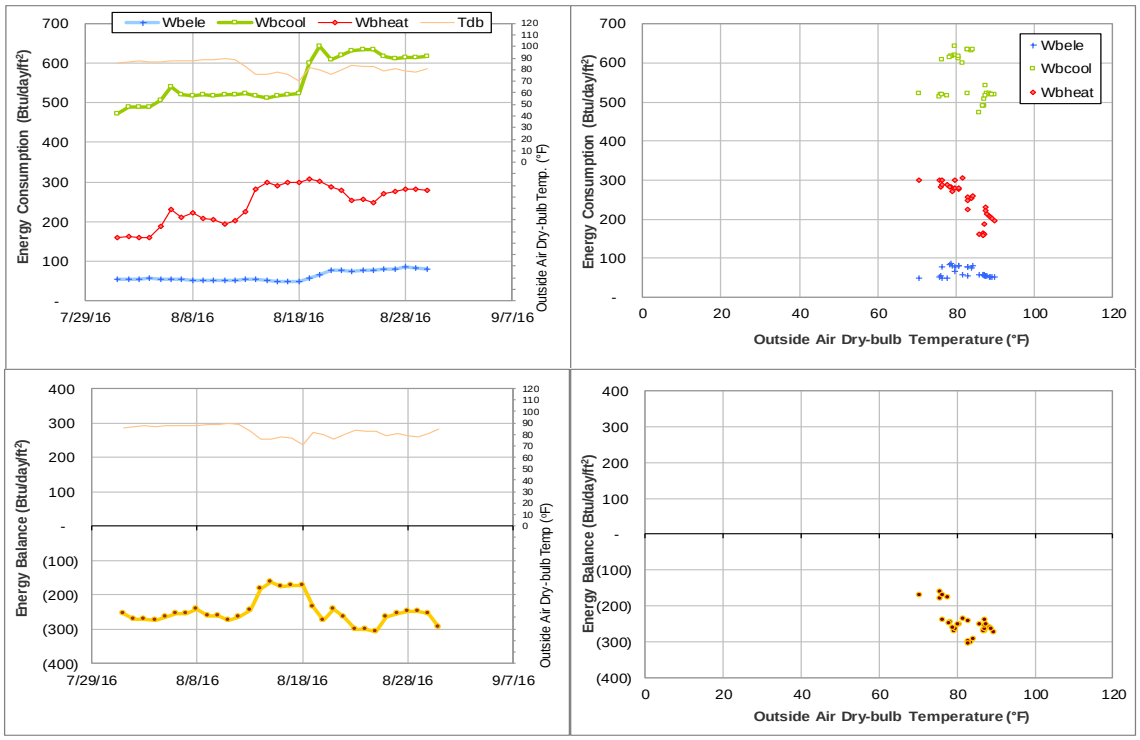


Figure IV-117 McFadden Residence Hall TAMU BLDG # 550 Energy Balance Plot during August 2016

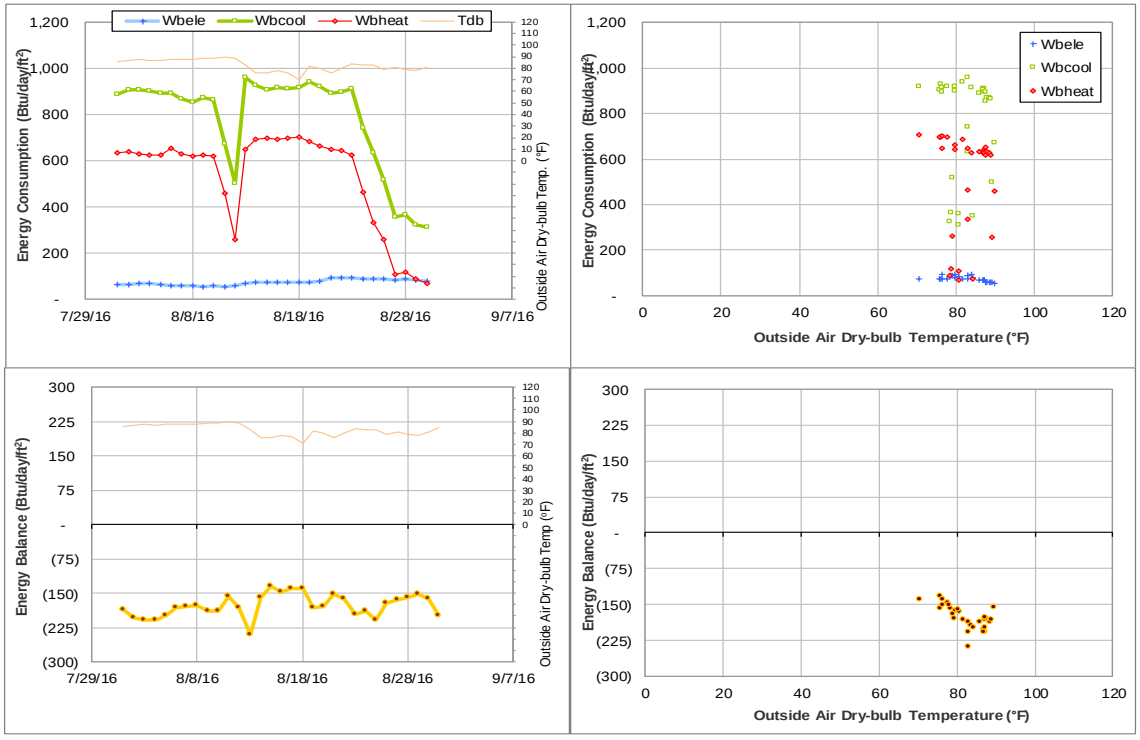


Figure IV-118 Neeley Residence Hall TAMU BLDG # 652 Energy Balance Plot during August 2016

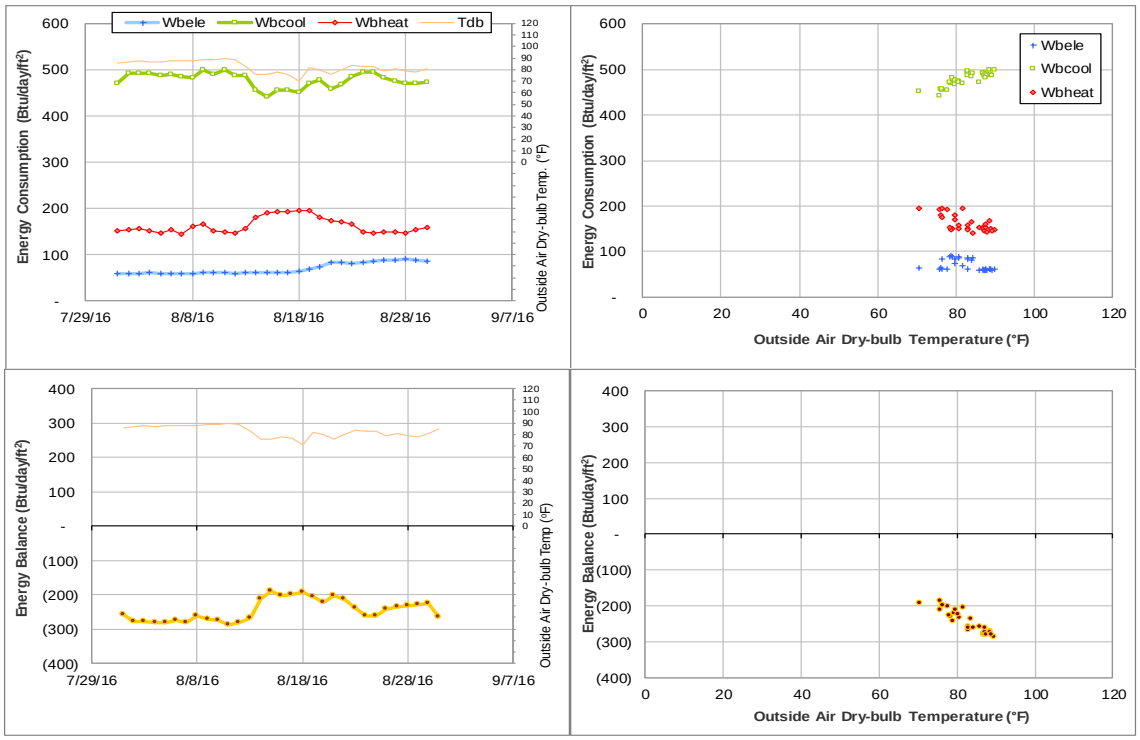


Figure IV-119 Hobby Residence Hall TAMU BLDG # 653 Energy Balance Plot during August 2016

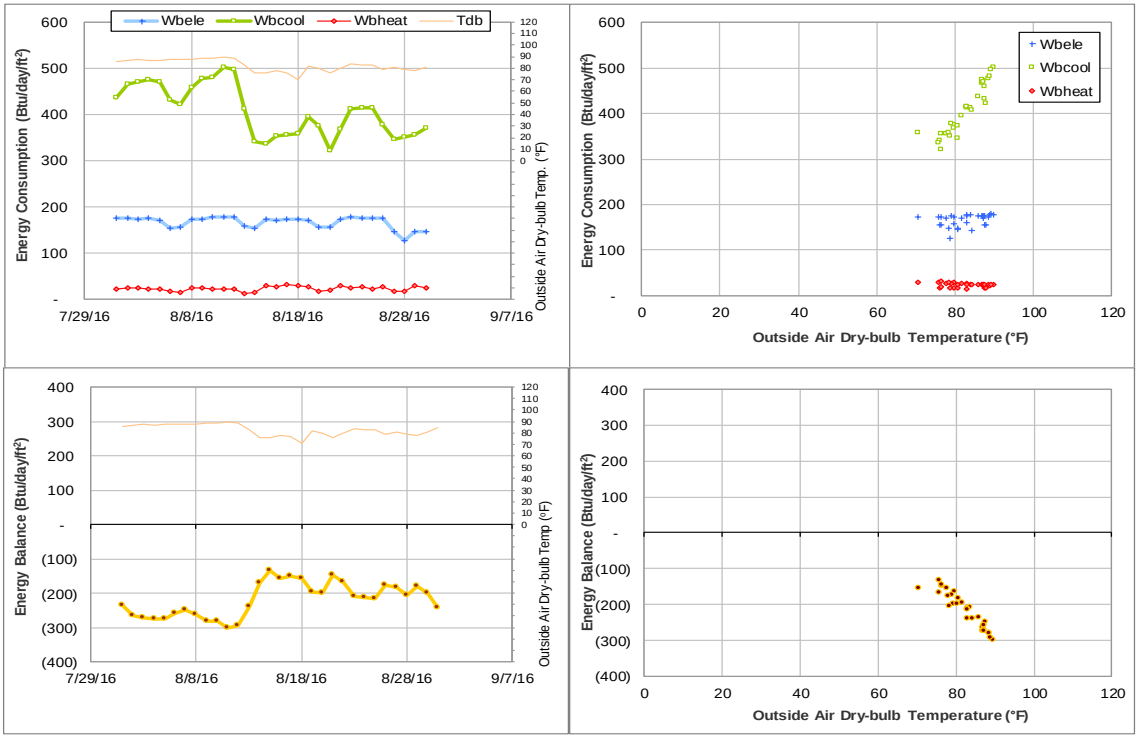


Figure IV-120 Wisenbaker Engineering Research Center TAMU BLDG # 682 Energy Balance Plot during August 2016

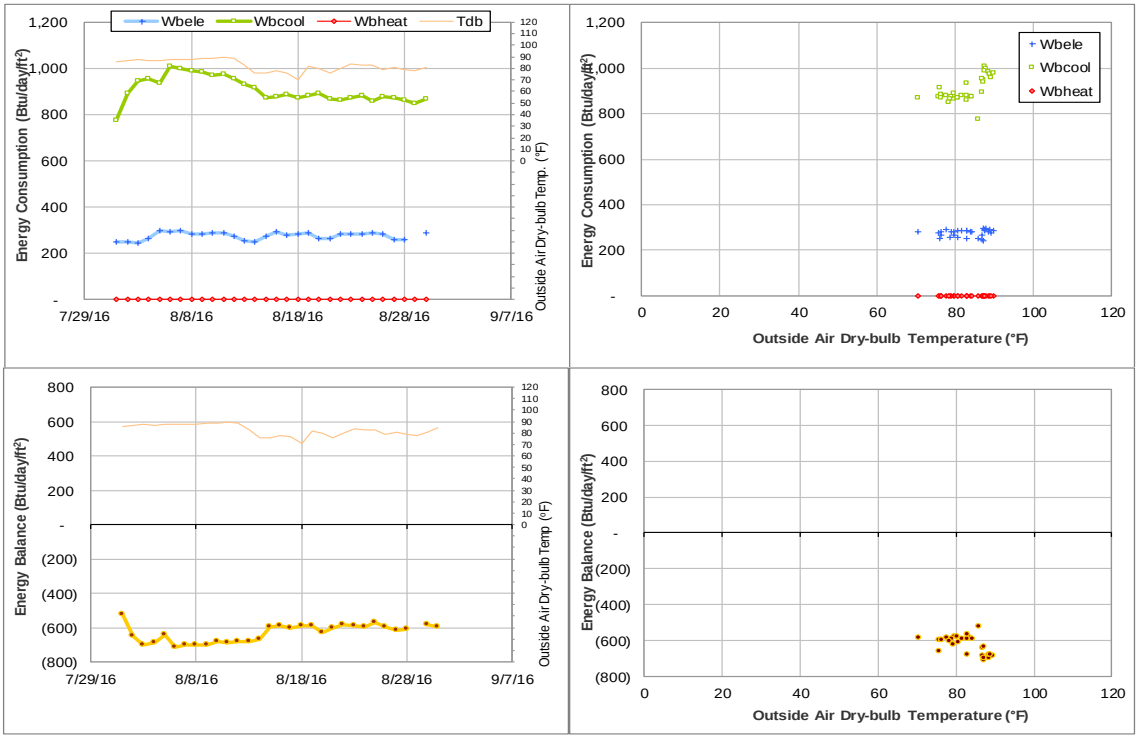


Figure IV-121 McNew Laboratory TAMU BLDG # 740 Energy Balance Plot during August 2016

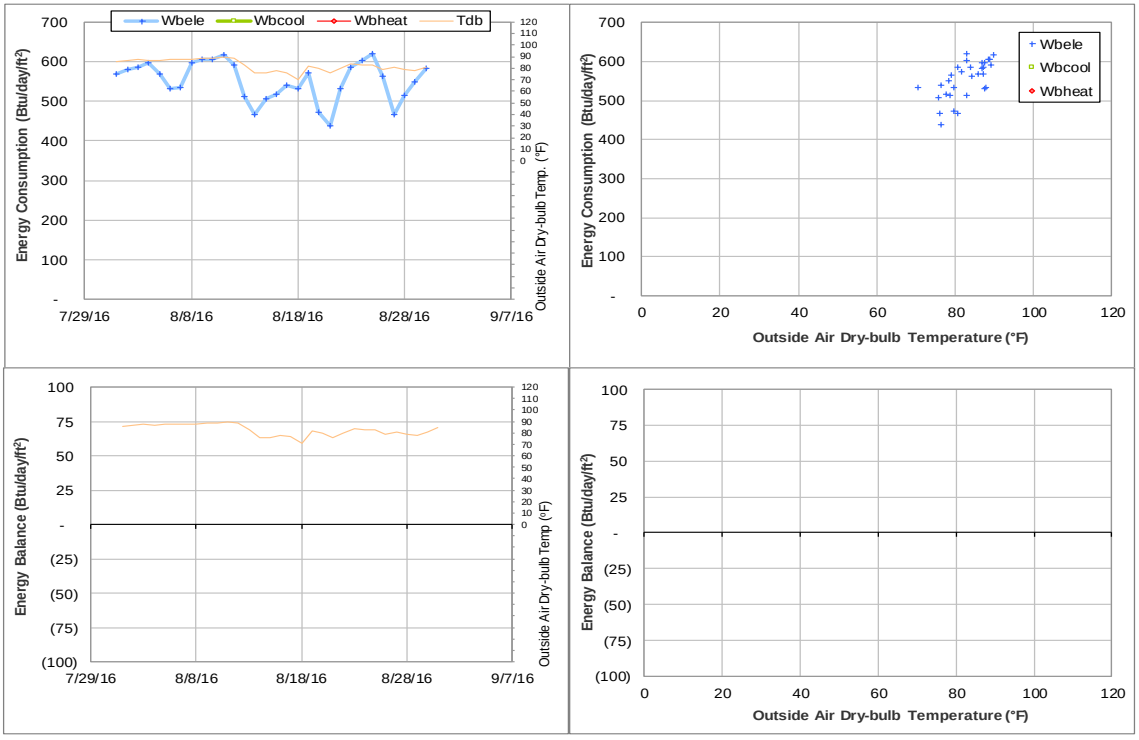


Figure IV-122 Soil Testing Labs TAMU BLDG # 806 Energy Balance Plot during August 2016

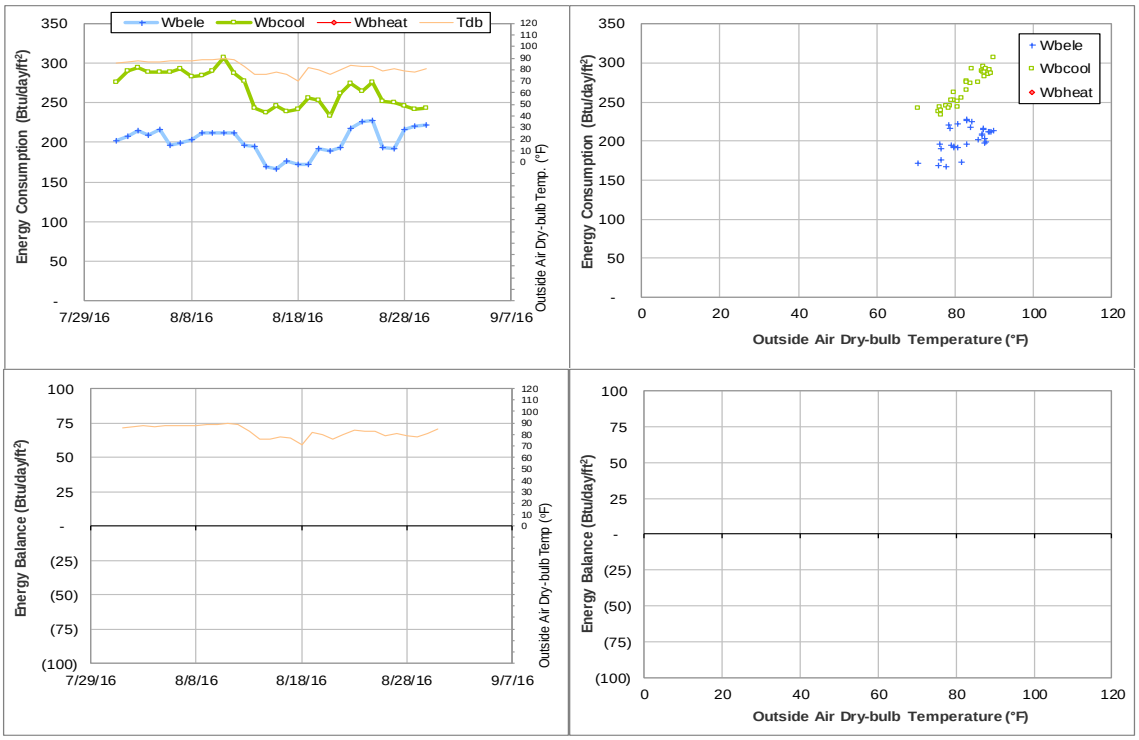


Figure IV-123 Entomology Research Lab TAMU BLDG # 815 Energy Balance Plot during August 2016

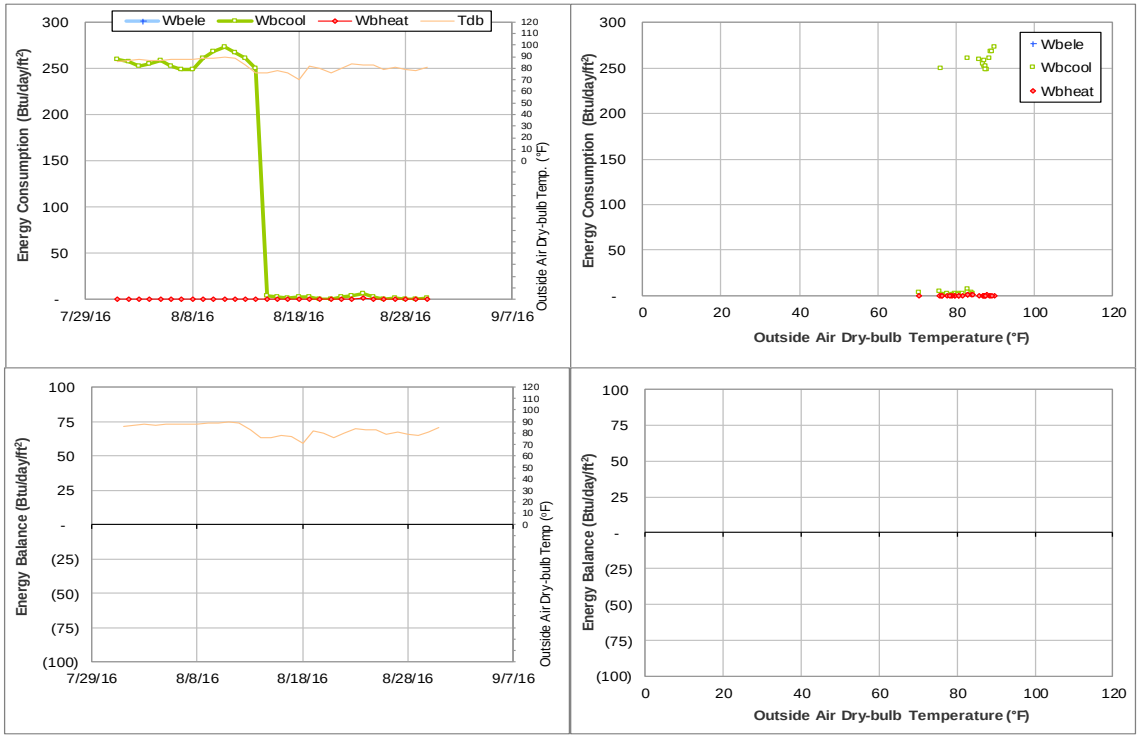


Figure IV-124 TVMC-Small Animal Building TAMU BLDG # 880 Energy Balance Plot during August 2016

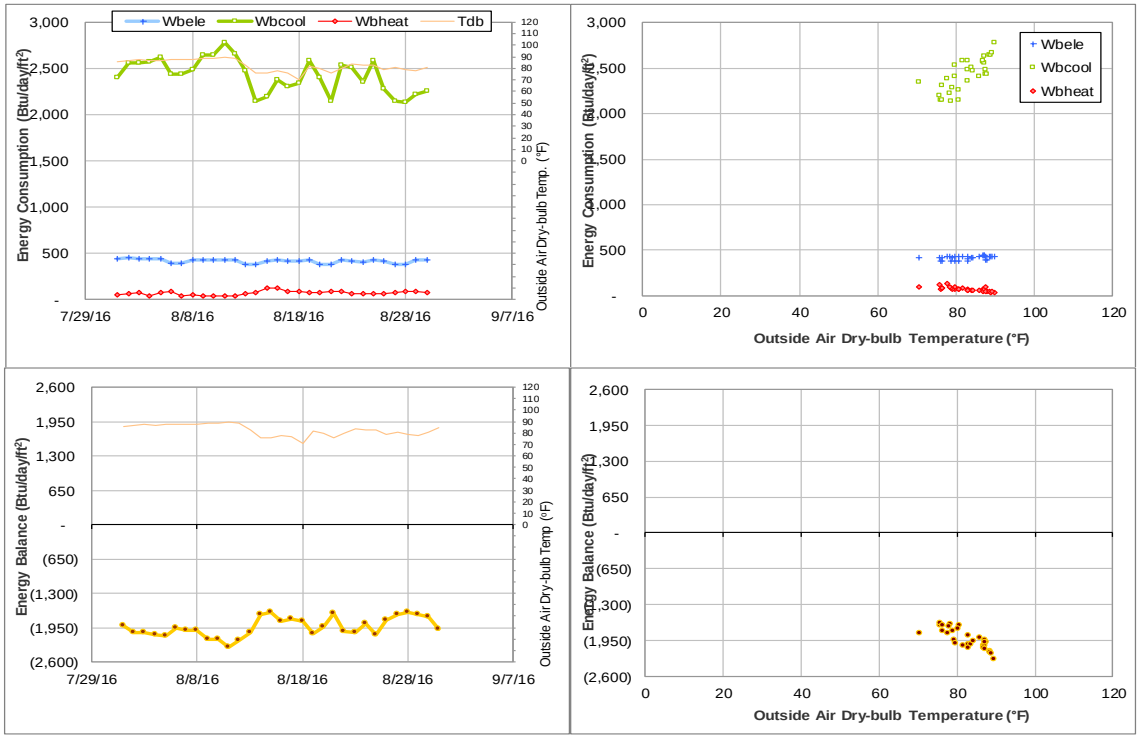


Figure IV-125 Laboratory Animal Care Building TAMU BLDG # 972 Energy Balance Plot during August 2016

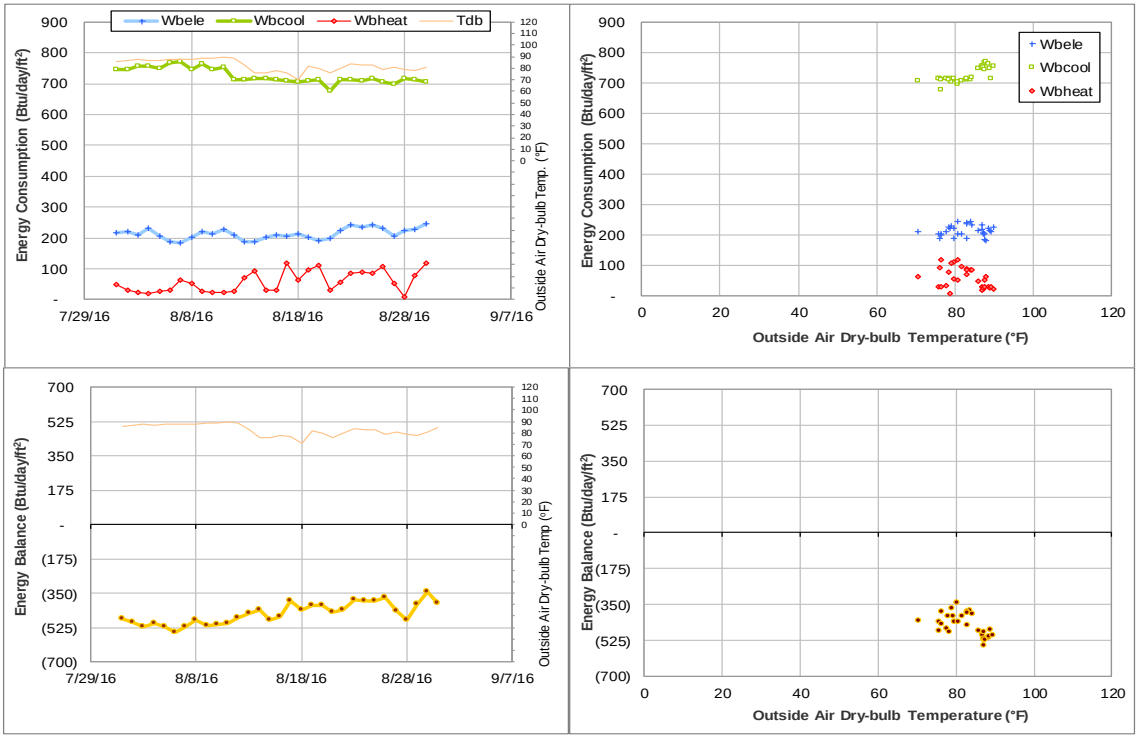


Figure IV-126 Vivarium III TAMU BLDG # 1020 Energy Balance Plot during August 2016

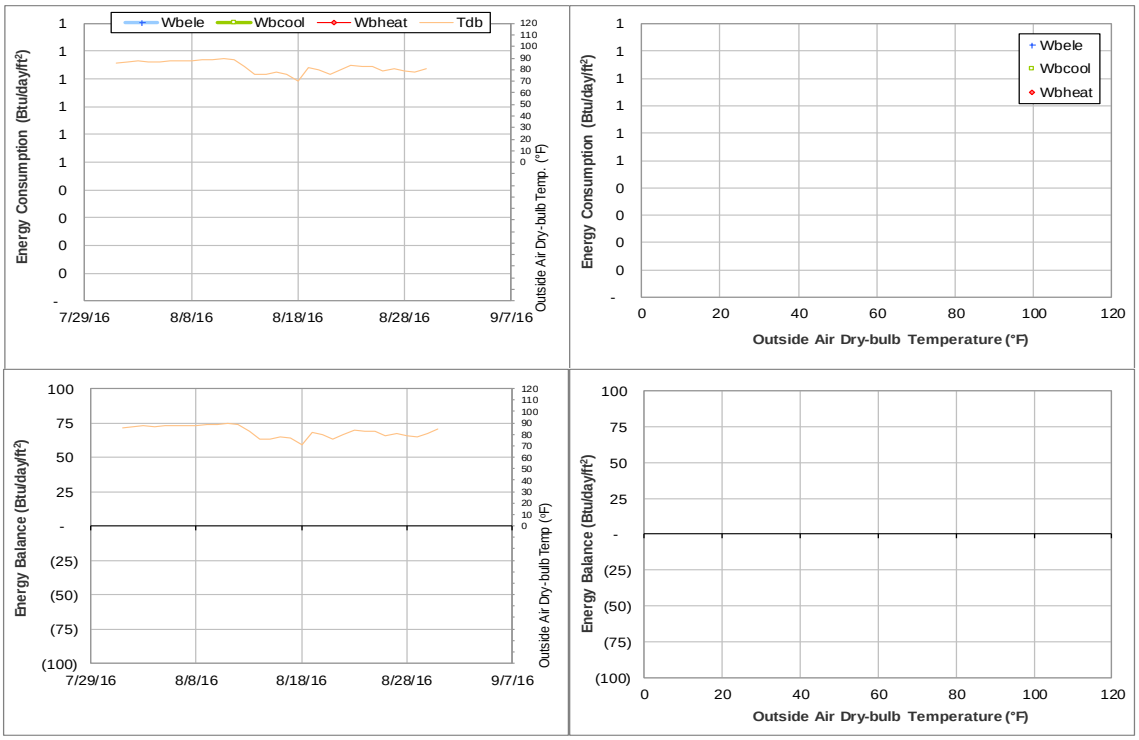


Figure IV-127 Texas Vet Med Diagnostic Lab TAMU BLDG # 1041 Energy Balance Plot during August 2016

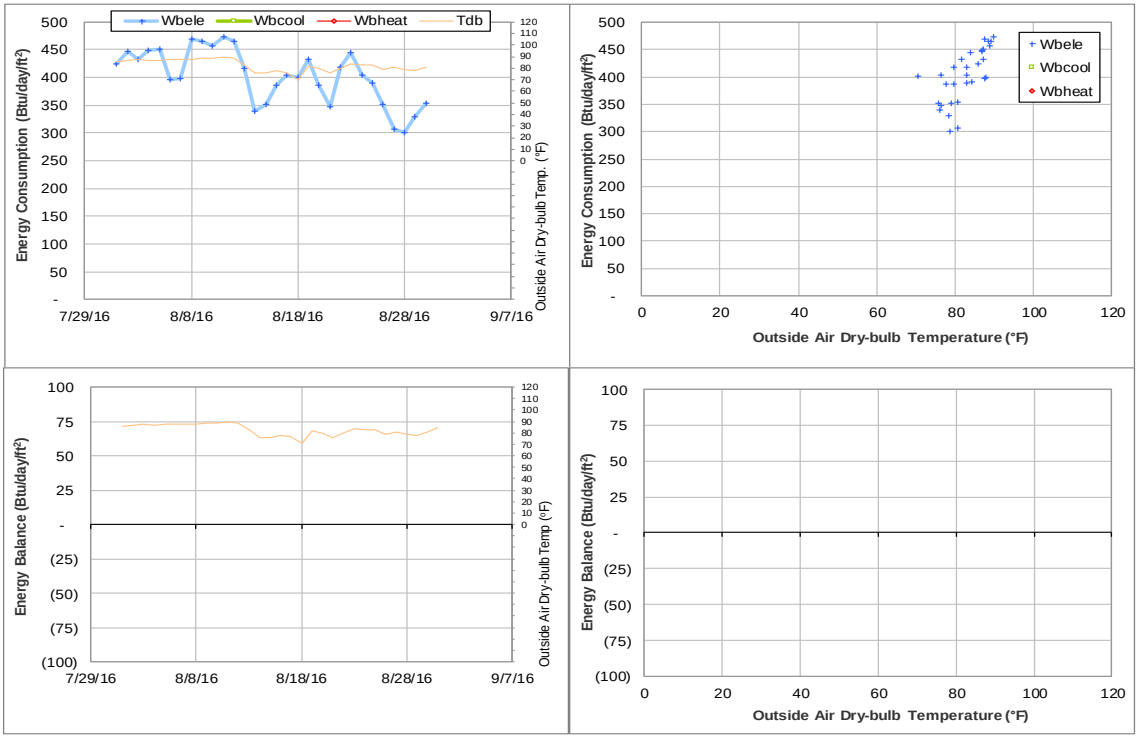


Figure IV-128 Forest Science Laboratory Building TAMU BLDG # 1042 Energy Balance Plot during August 2016

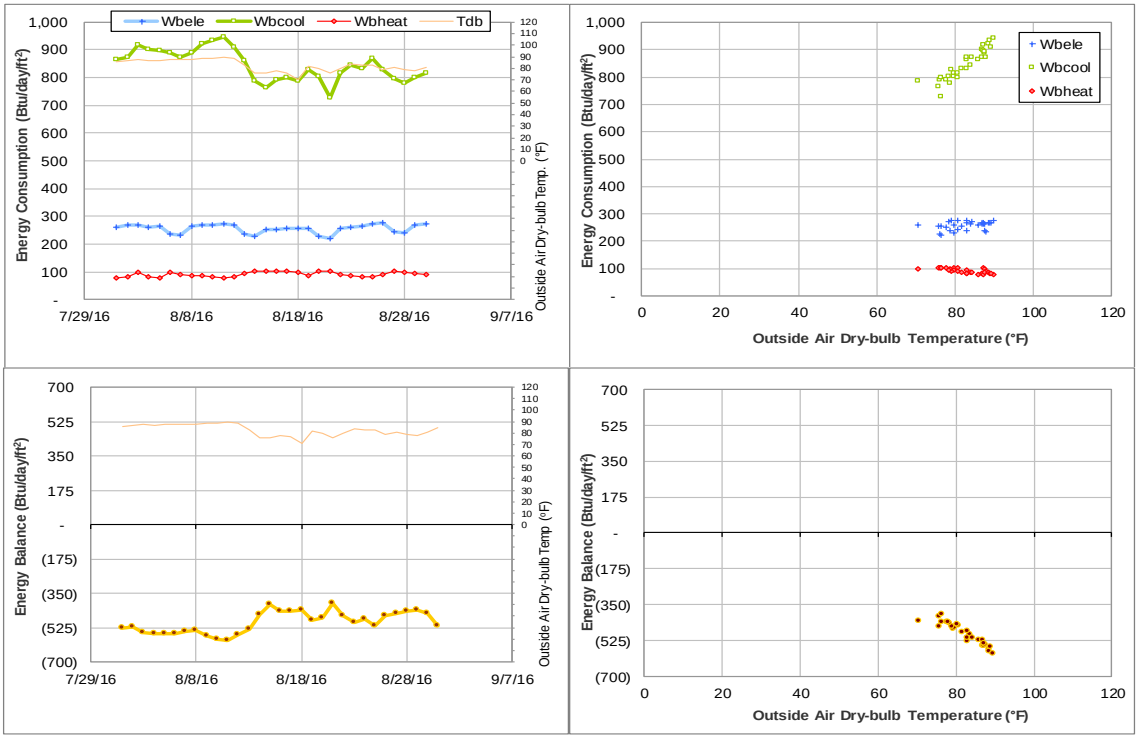


Figure IV-129 Veterinary Small Animal Hospital TAMU BLDG # 1085 Energy Balance Plot during August 2016

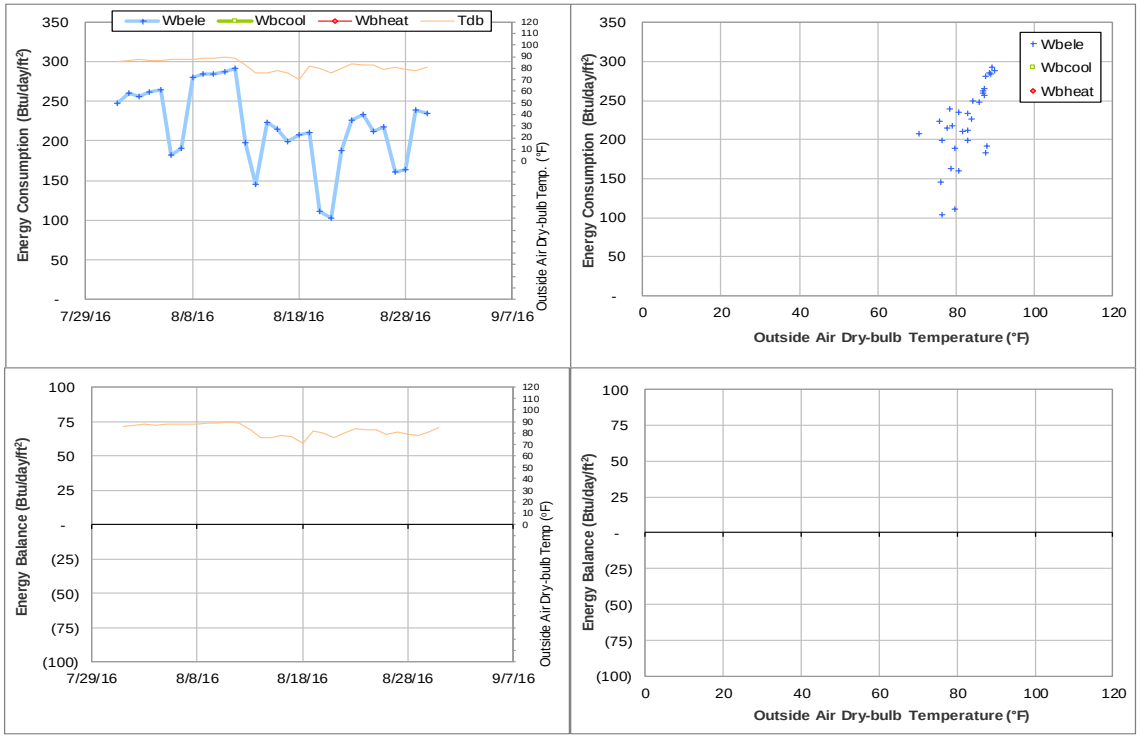


Figure IV-130 Utilities Energy Office Annex TAMU BLDG # 1089 Energy Balance Plot during August 2016

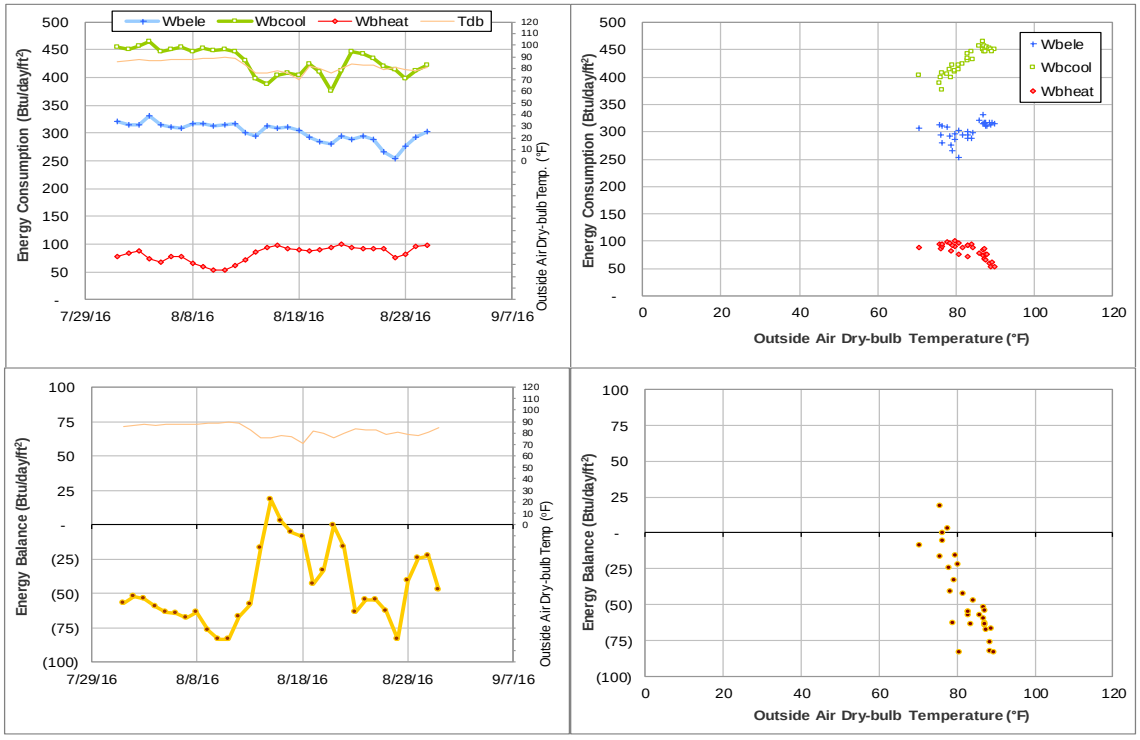


Figure IV-131 Biological Control Facility TAMU BLDG # 1146 Energy Balance Plot during August 2016

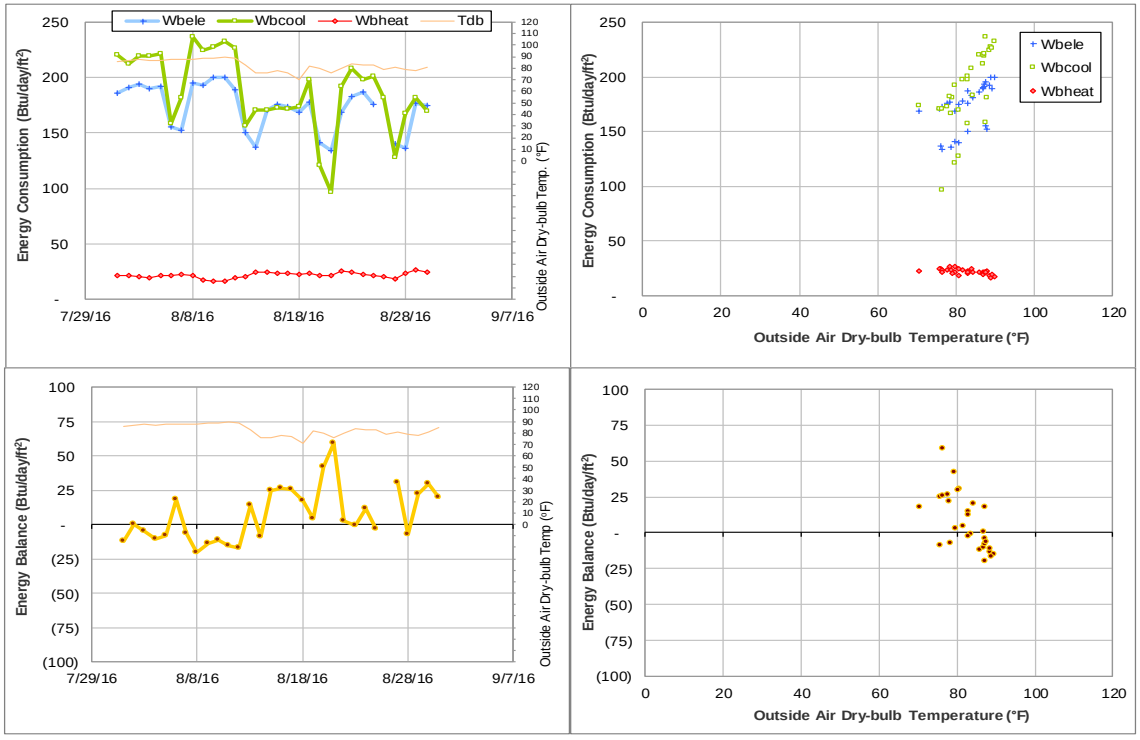


Figure IV-132 Physical Plant Administration & Shops TAMU BLDG # 1156 Energy Balance Plot during August 2016

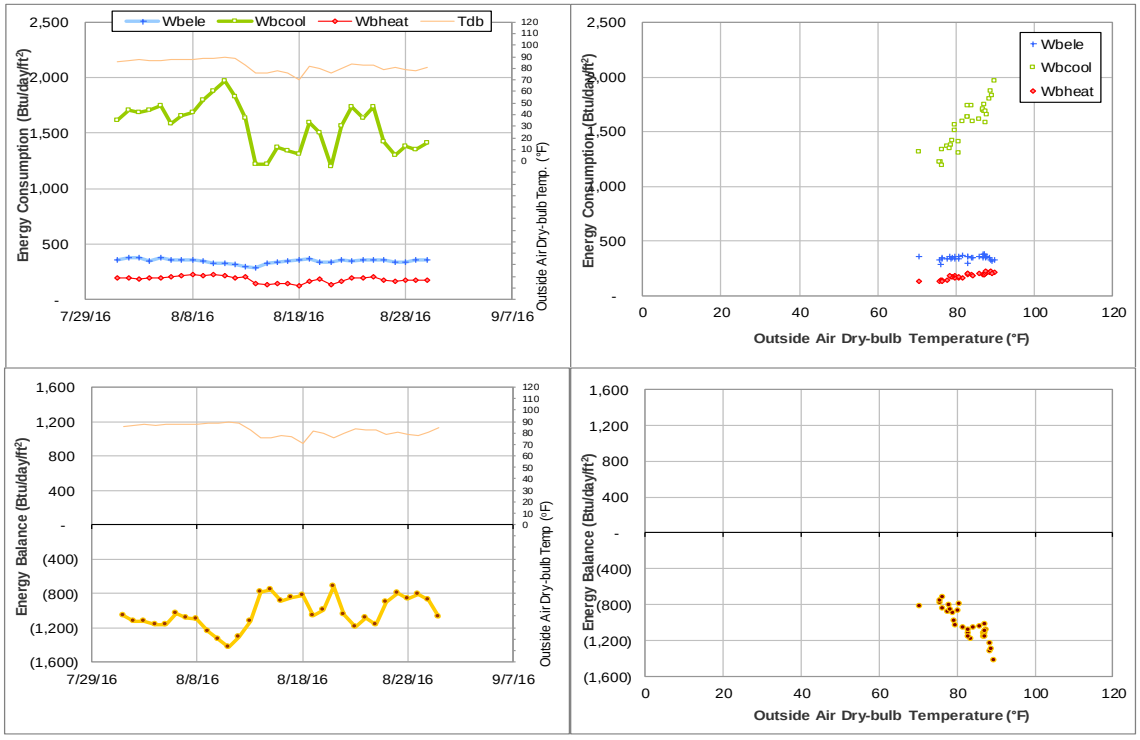


Figure IV-133 Veterinary Anatomic Pathology TAMU BLDG # 1184 Energy Balance Plot during August 2016

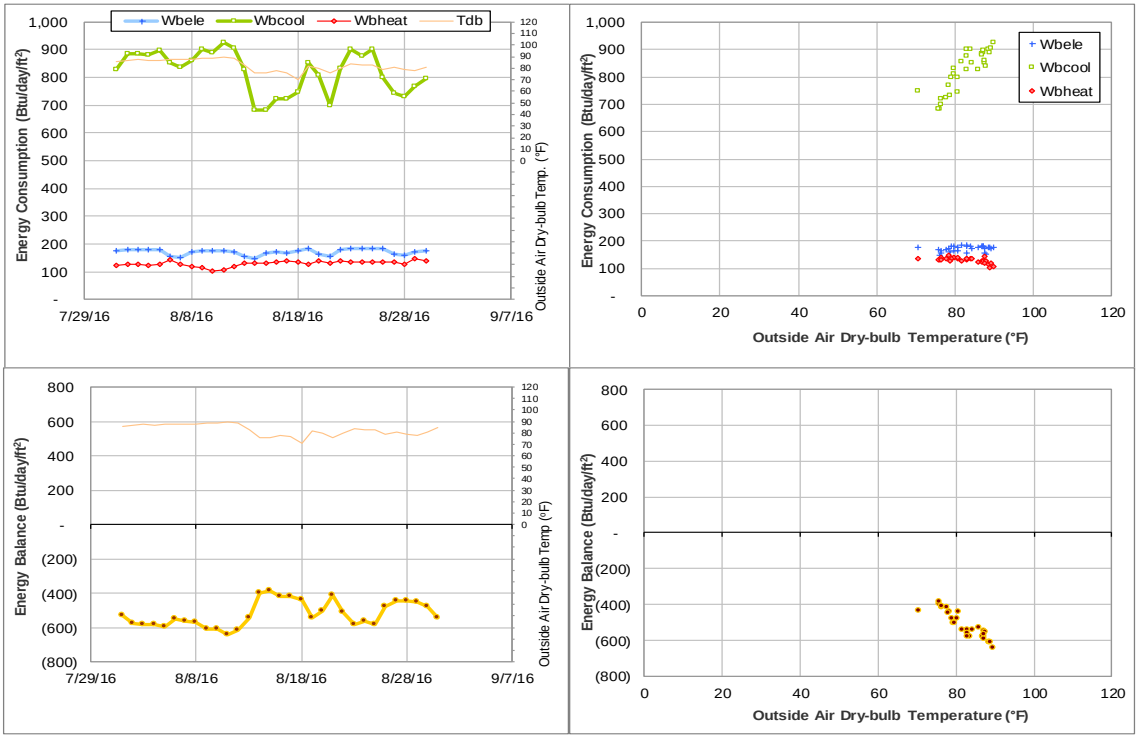


Figure IV-134 Veterinary Large Animal Hospital TAMU BLDG # 1194 Energy Balance Plot during August 2016

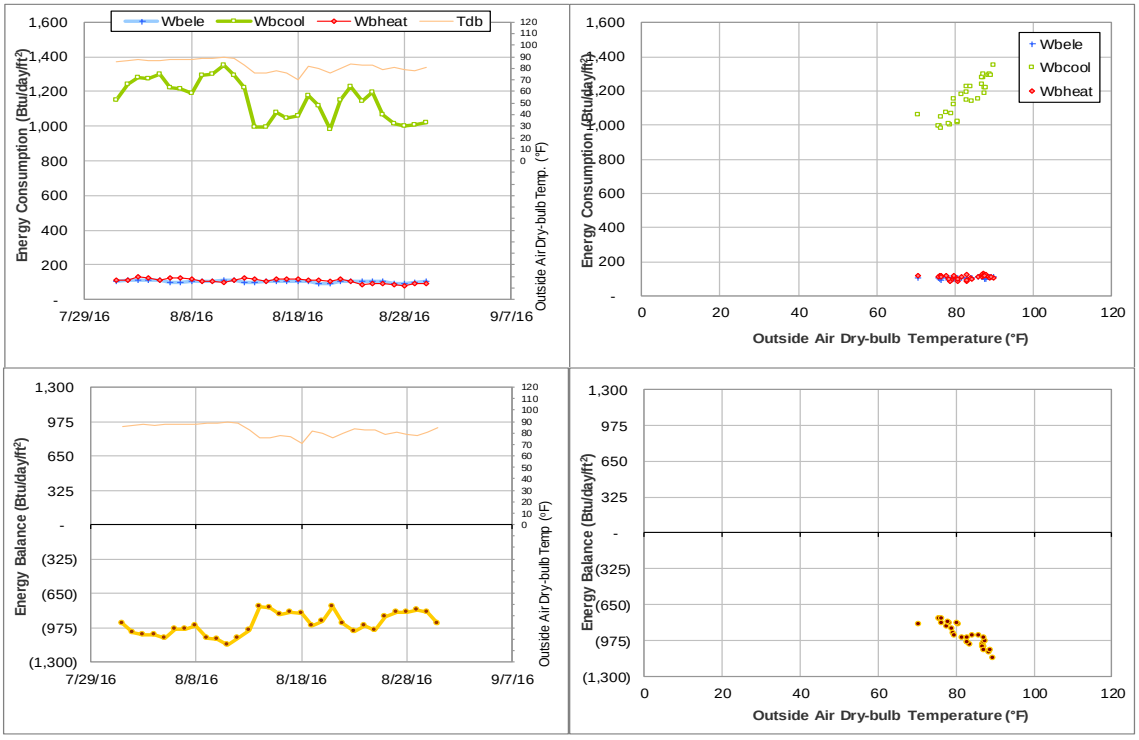


Figure IV-135 Veterinary Research Building TAMU BLDG # 1197 Energy Balance Plot during August 2016

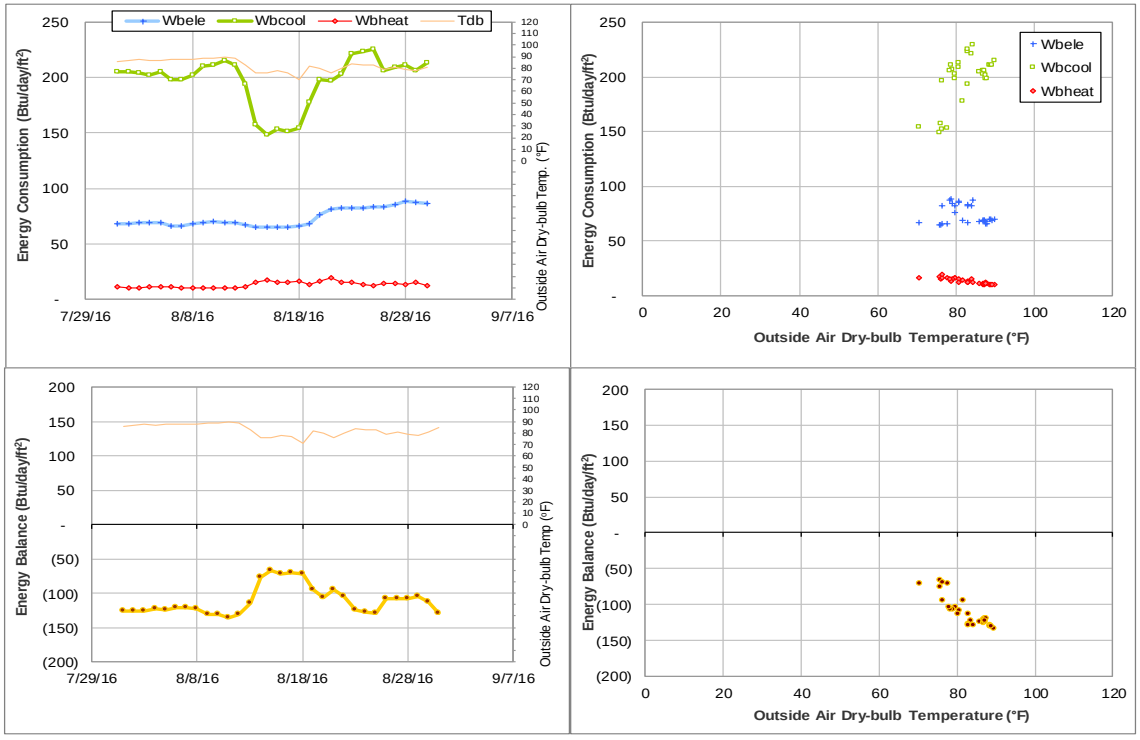


Figure IV-136 Hullabaloo Residence Hall TAMU BLDG # 1416 Energy Balance Plot during August 2016

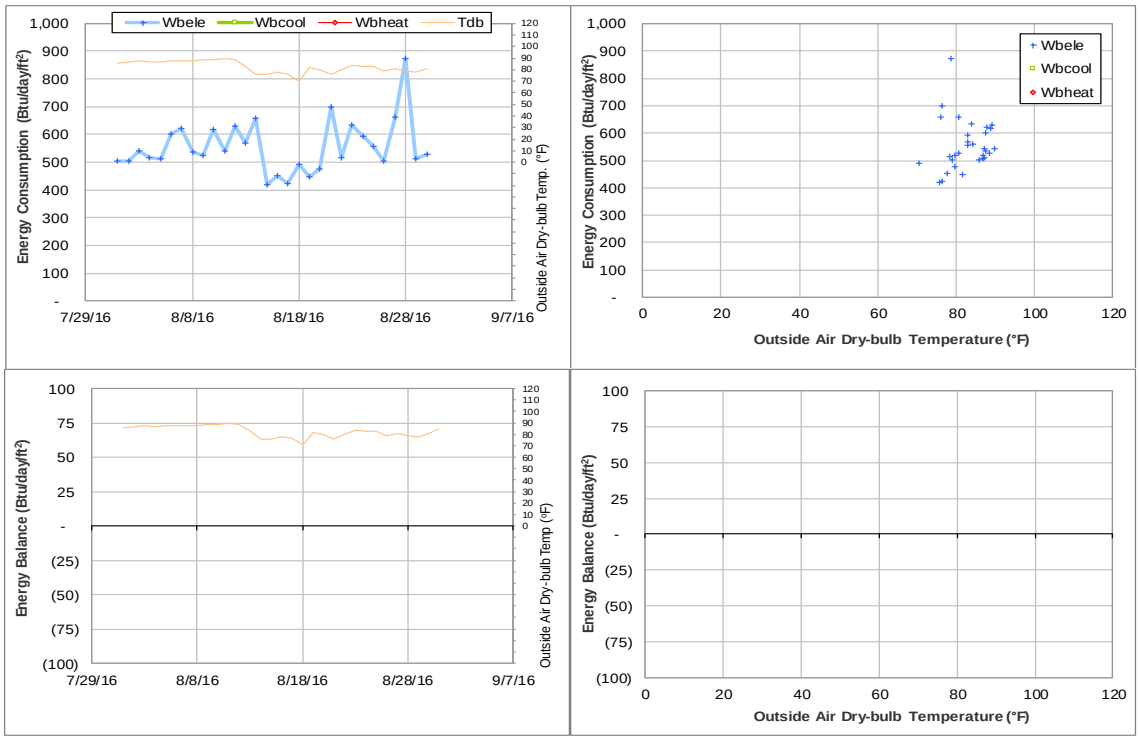


Figure IV-137 University Apartments - Laundry at the Gardens TAMU BLDG # 1450 Energy Balance Plot during August 2016

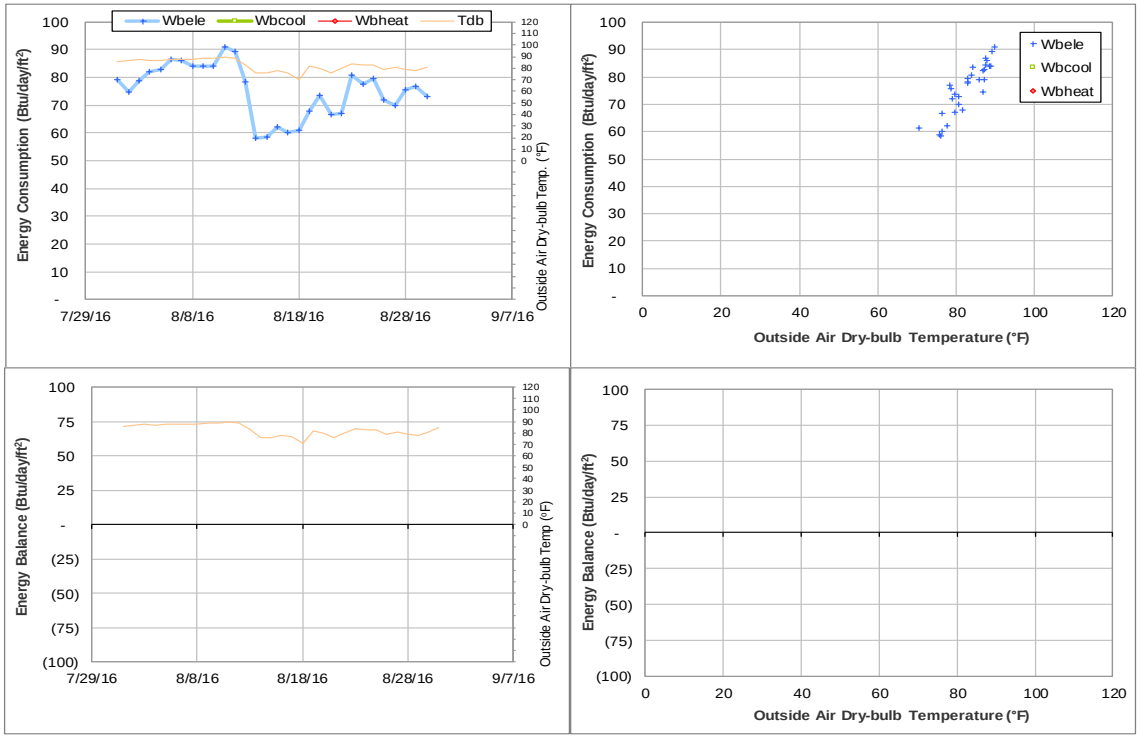


Figure IV-138 University Apartments - The Gardens J TAMU BLDG # 1451 Energy Balance Plot during August 2016

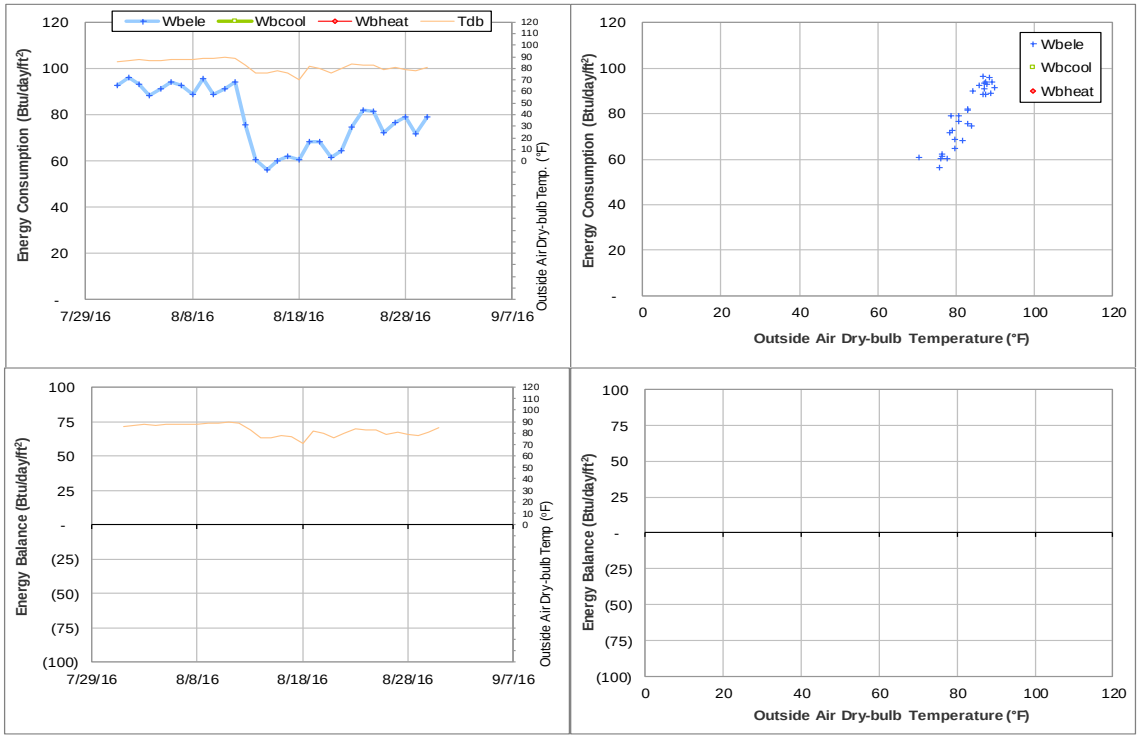


Figure IV-139 University Apartments - The Gardens L TAMU BLDG # 1453 Energy Balance Plot during August 2016

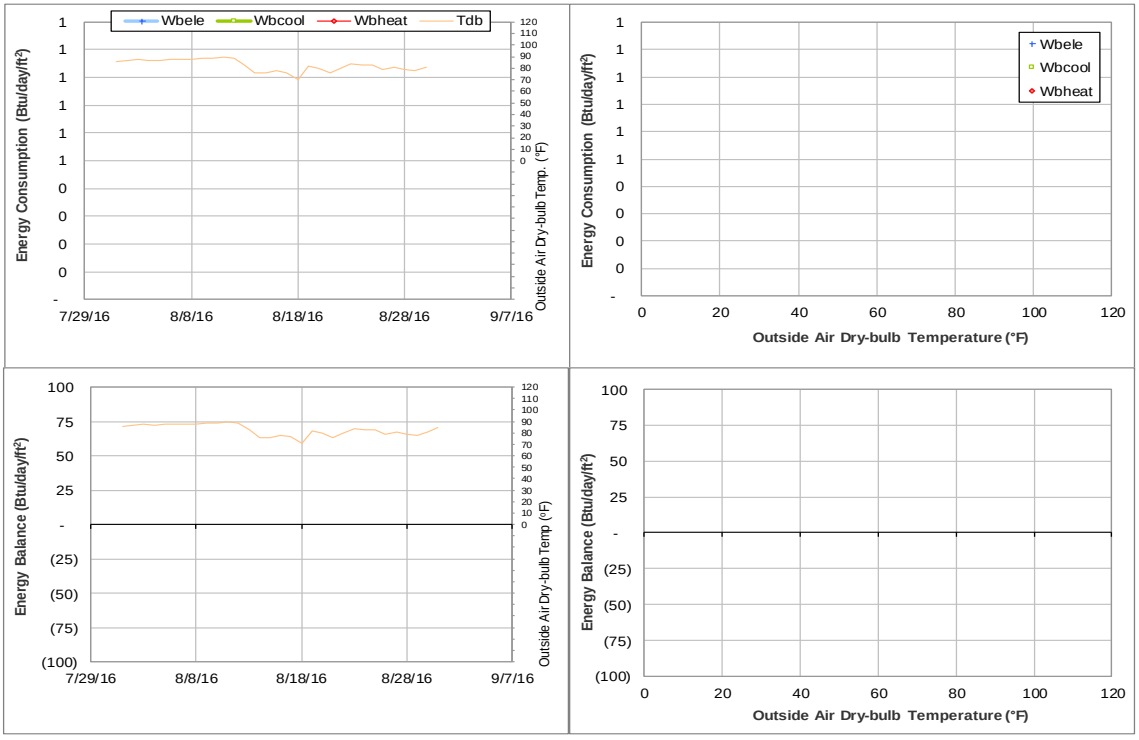


Figure IV-140 University Apartments - The Gardens F TAMU BLDG # 1454 Energy Balance Plot during August 2016

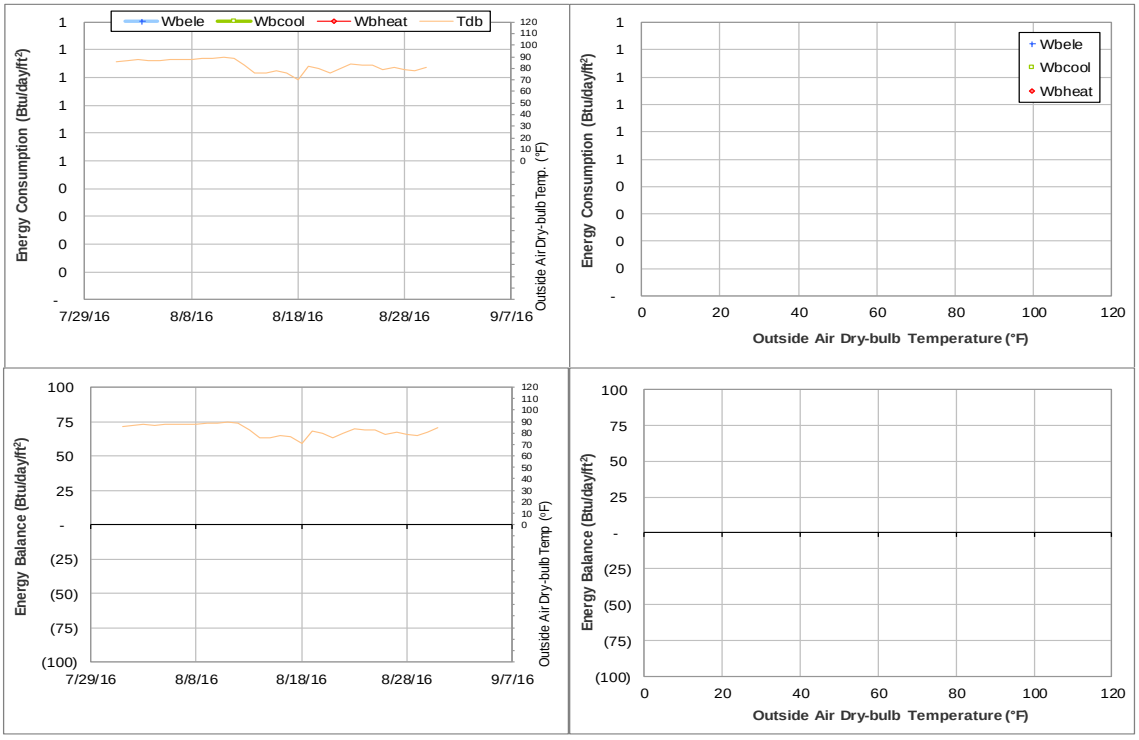


Figure IV-141 University Apartments - The Gardens G TAMU BLDG # 1455 Energy Balance Plot during August 2016

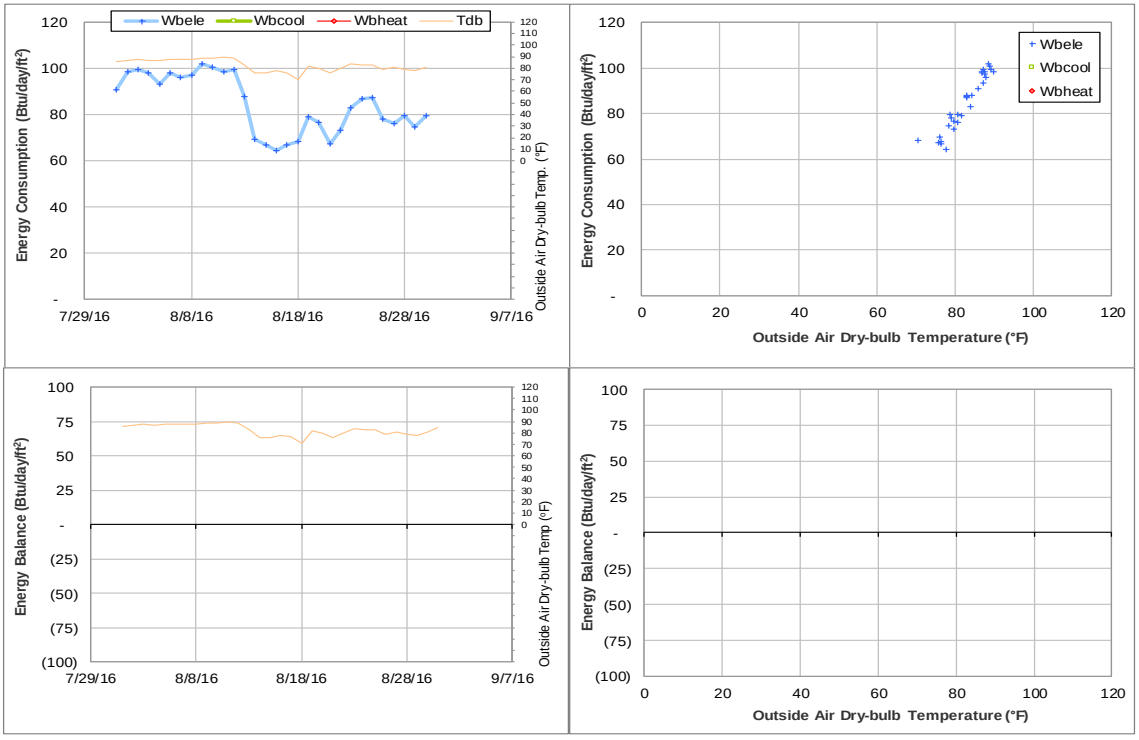


Figure IV-142 University Apartments - The Gardens H TAMU BLDG # 1456 Energy Balance Plot during August 2016

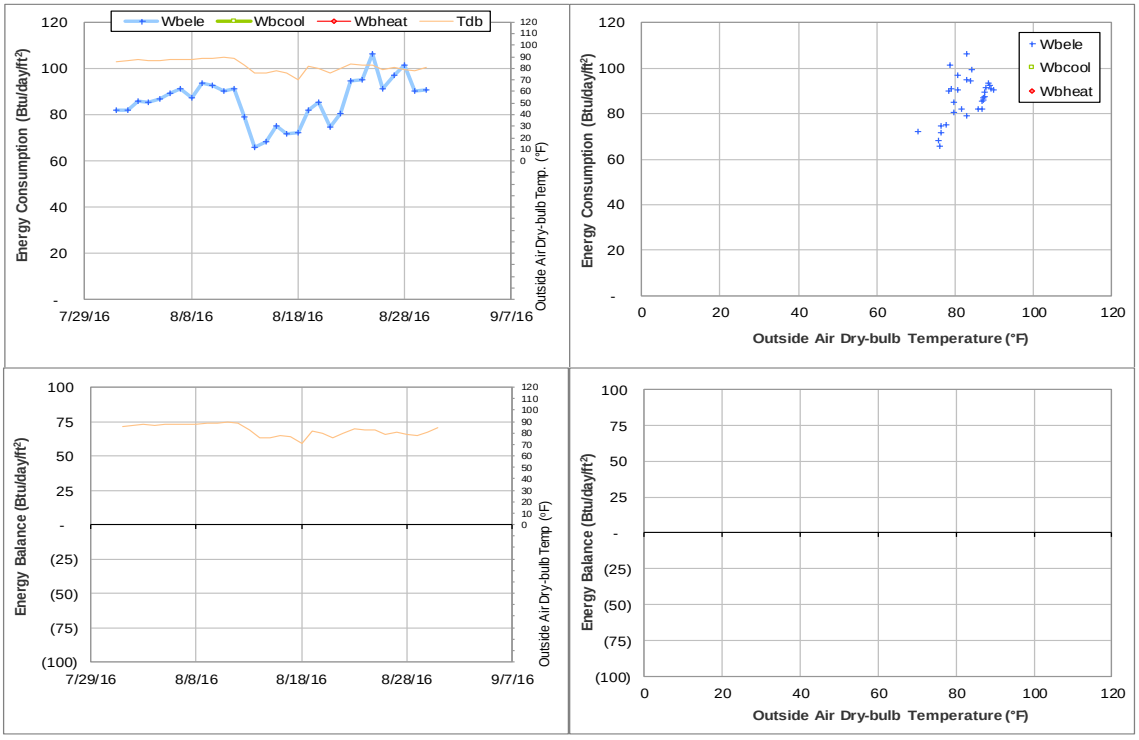


Figure IV-143 University Apartments - The Gardens M TAMU BLDG # 1457 Energy Balance Plot during August 2016

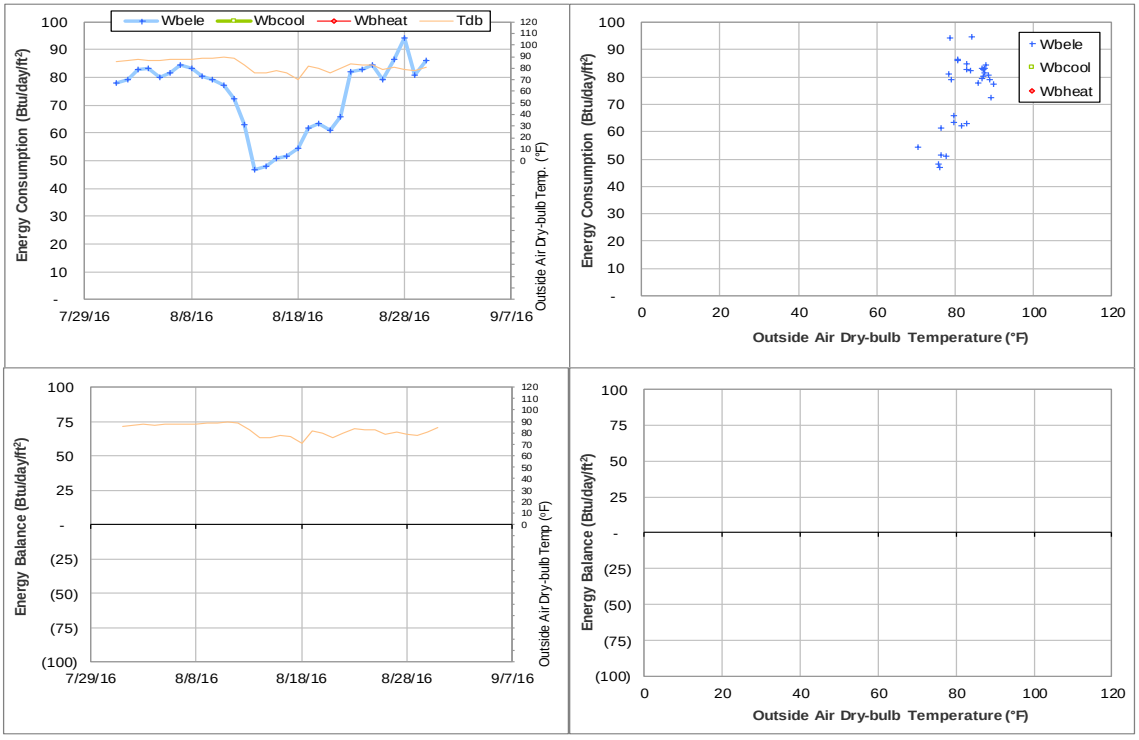


Figure IV-144 University Apartments - The Gardens N TAMU BLDG # 1458 Energy Balance Plot during August 2016

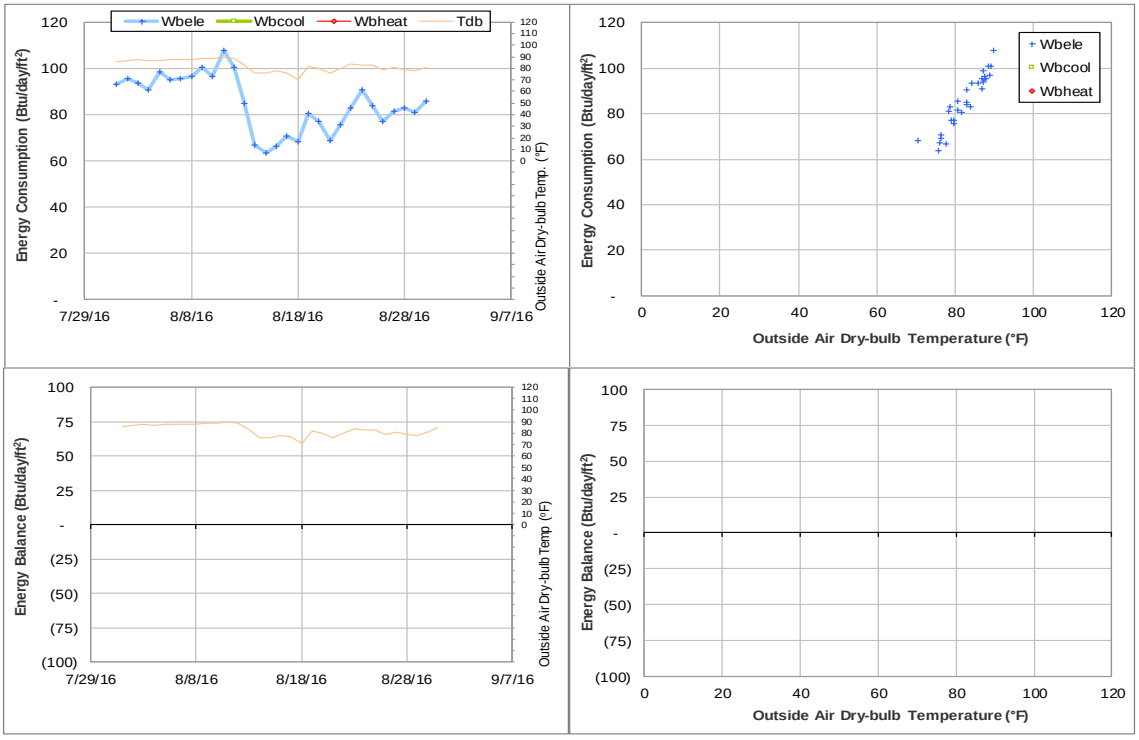


Figure IV-145 University Apartments - The Gardens P TAMU BLDG # 1459 Energy Balance Plot during August 2016

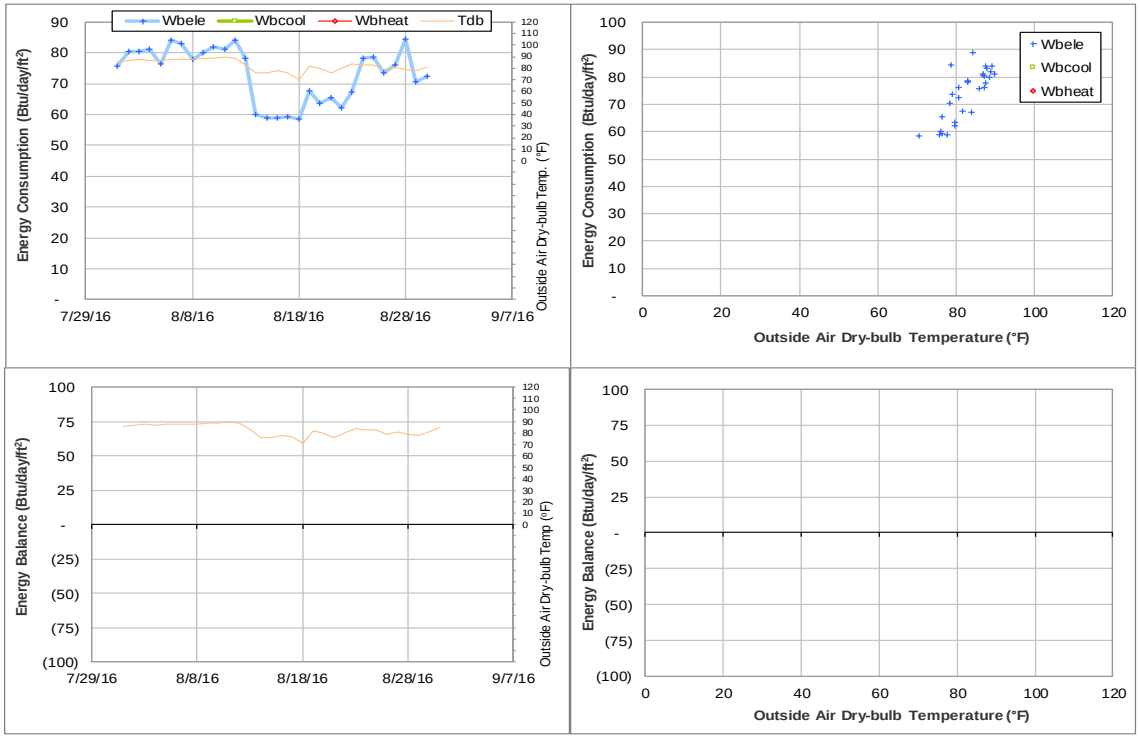


Figure IV-146 University Apartments - The Gardens Q TAMU BLDG # 1460 Energy Balance Plot during August 2016

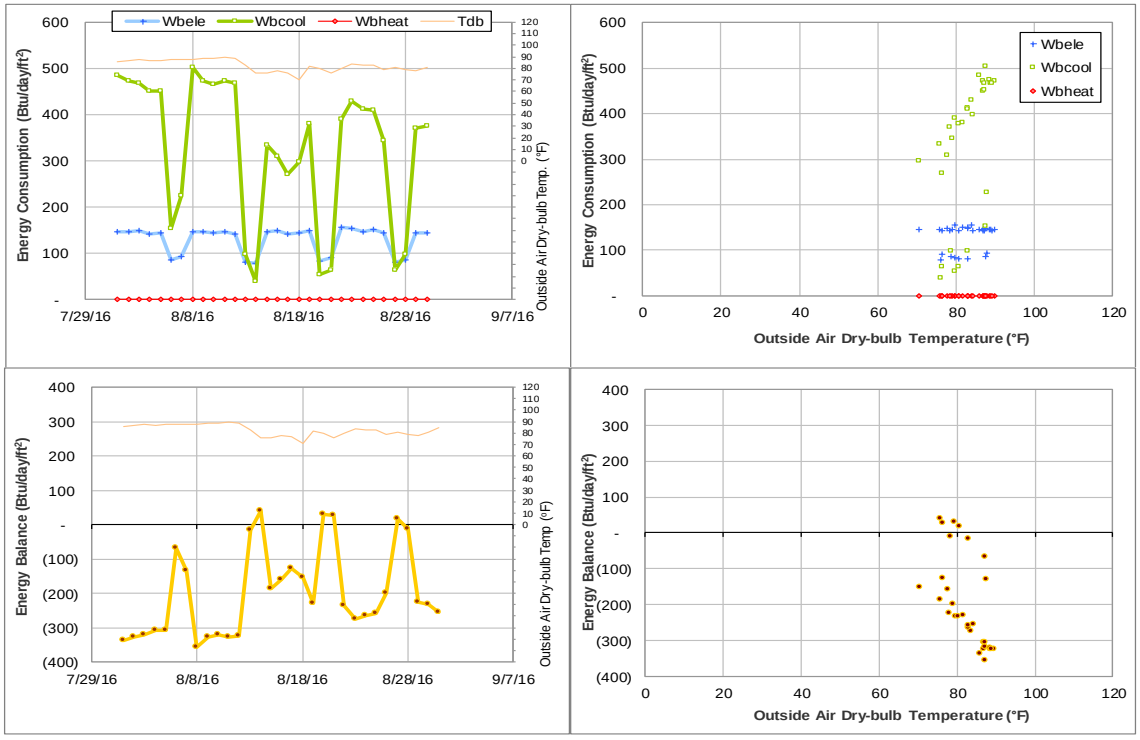


Figure IV-147 Utilities & Energy Services Business Office TAMU BLDG # 1497 Energy Balance Plot during August 2016

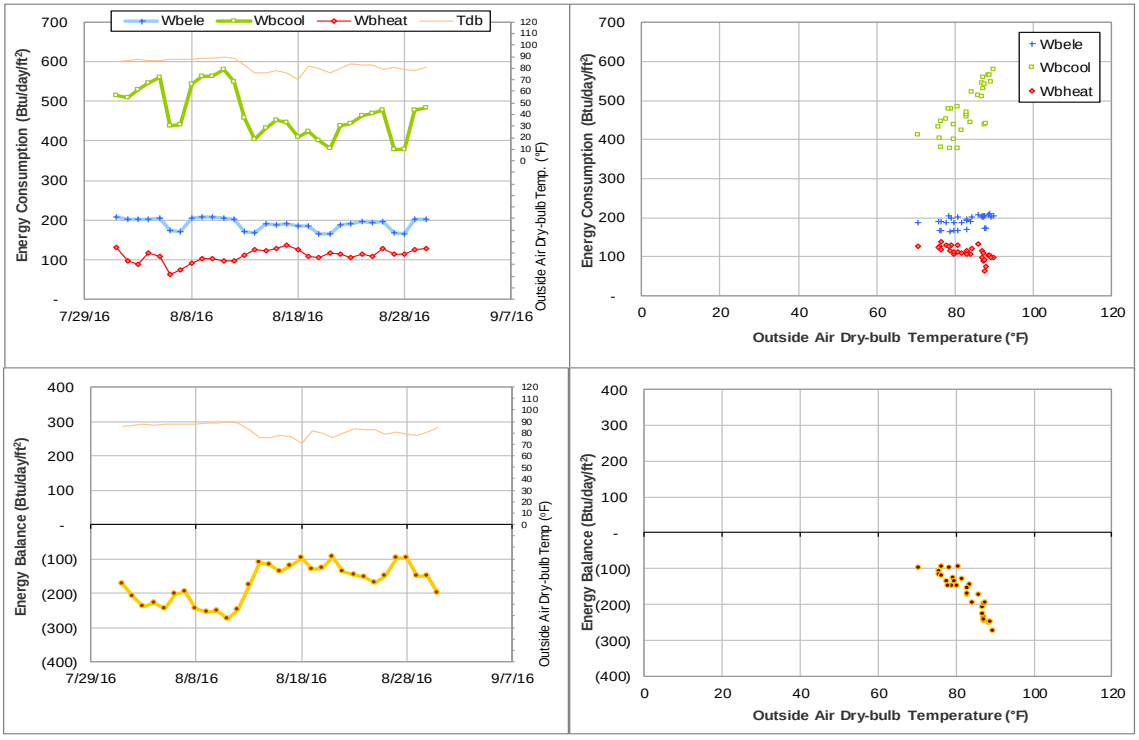


Figure IV-148 Kleberg Center TAMU BLDG # 1501 Energy Balance Plot during August 2016

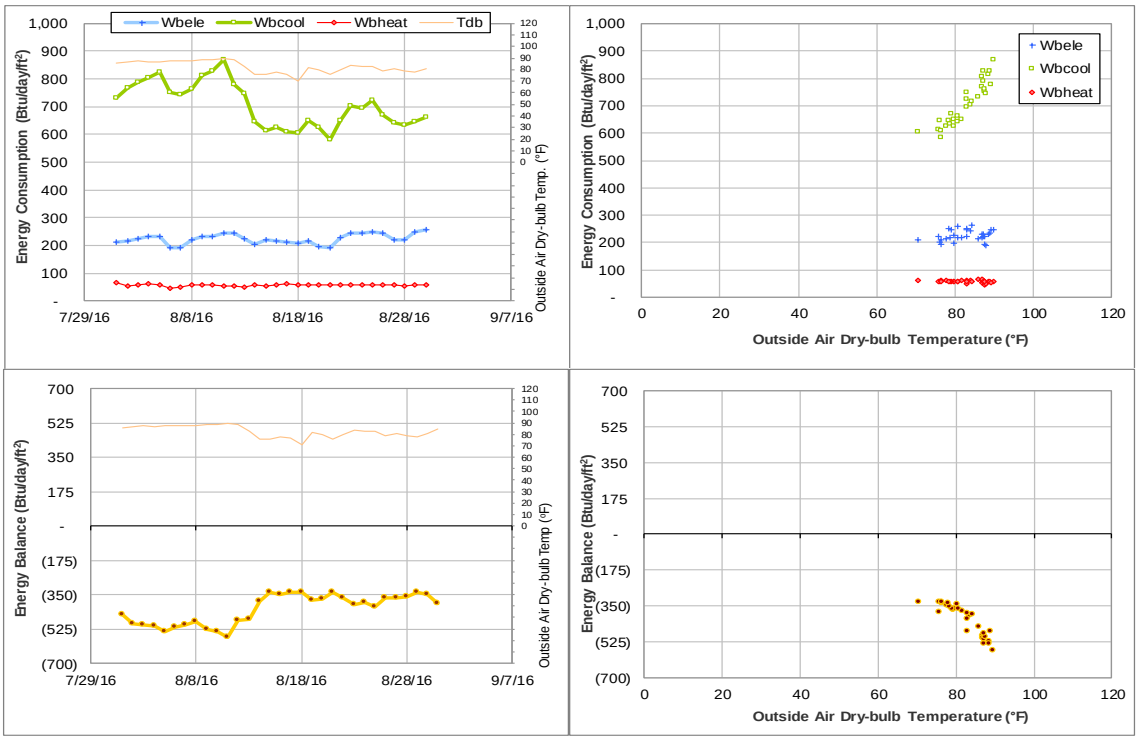


Figure IV-149 Heep Center TAMU BLDG # 1502 Energy Balance Plot during August 2016

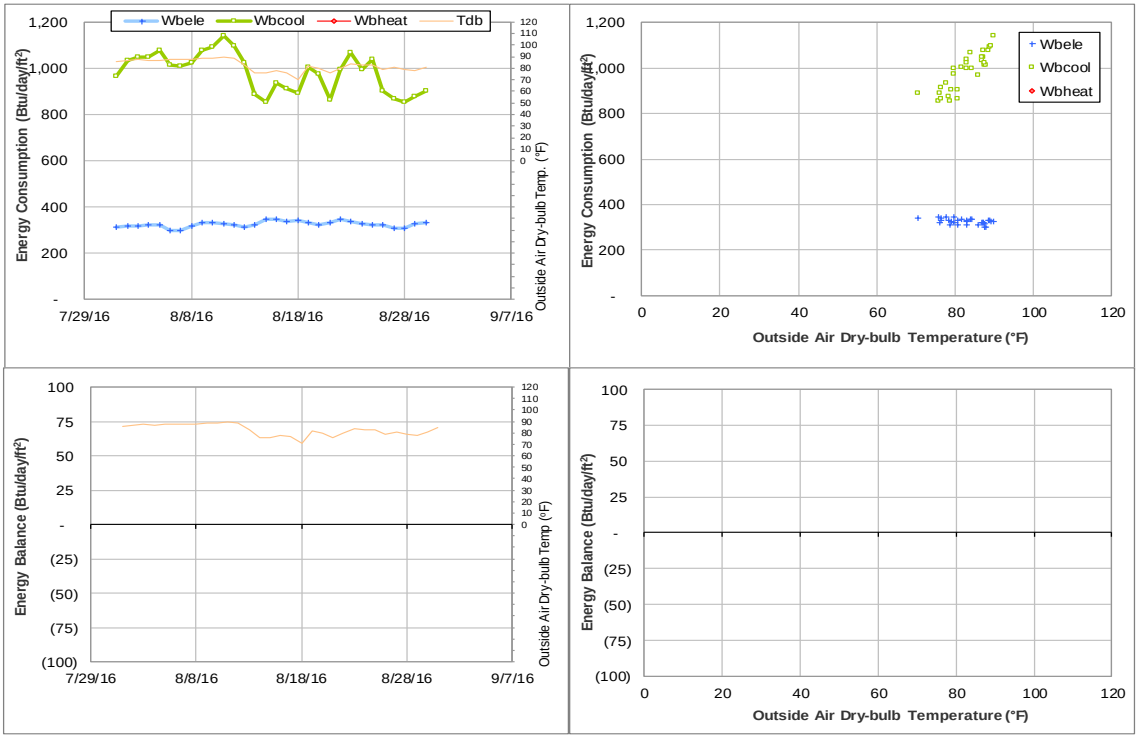


Figure IV-150 Cater-Mattil Hall TAMU BLDG # 1503 Energy Balance Plot during August 2016

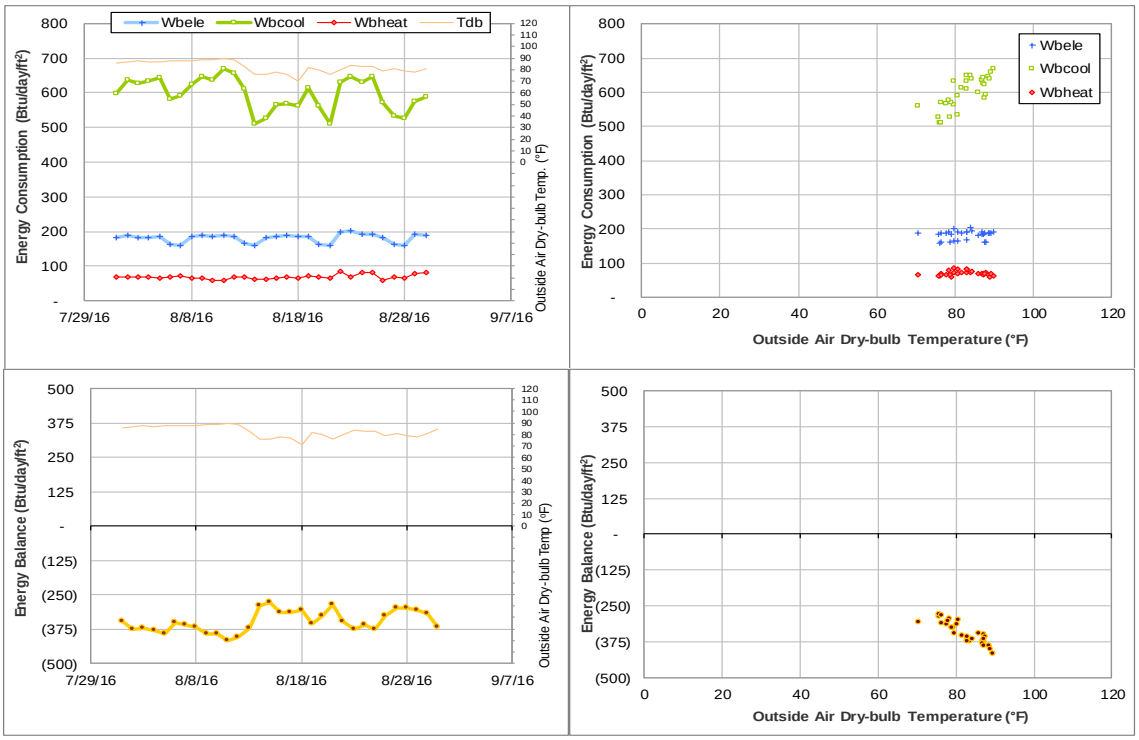


Figure IV-151 Reynolds Medical Sciences Building TAMU BLDG # 1504 Energy Balance Plot during August 2016

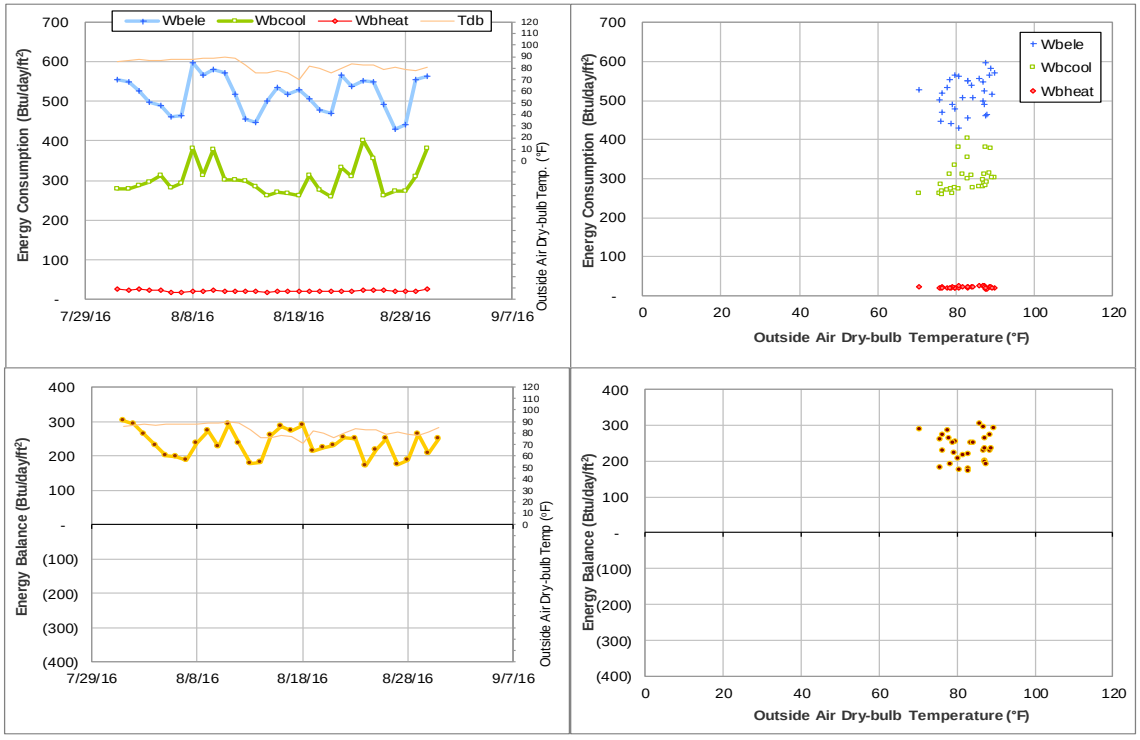


Figure IV-152 Rosenthal Meat Science & Technology Center TAMU BLDG # 1505 Energy Balance Plot during August 2016

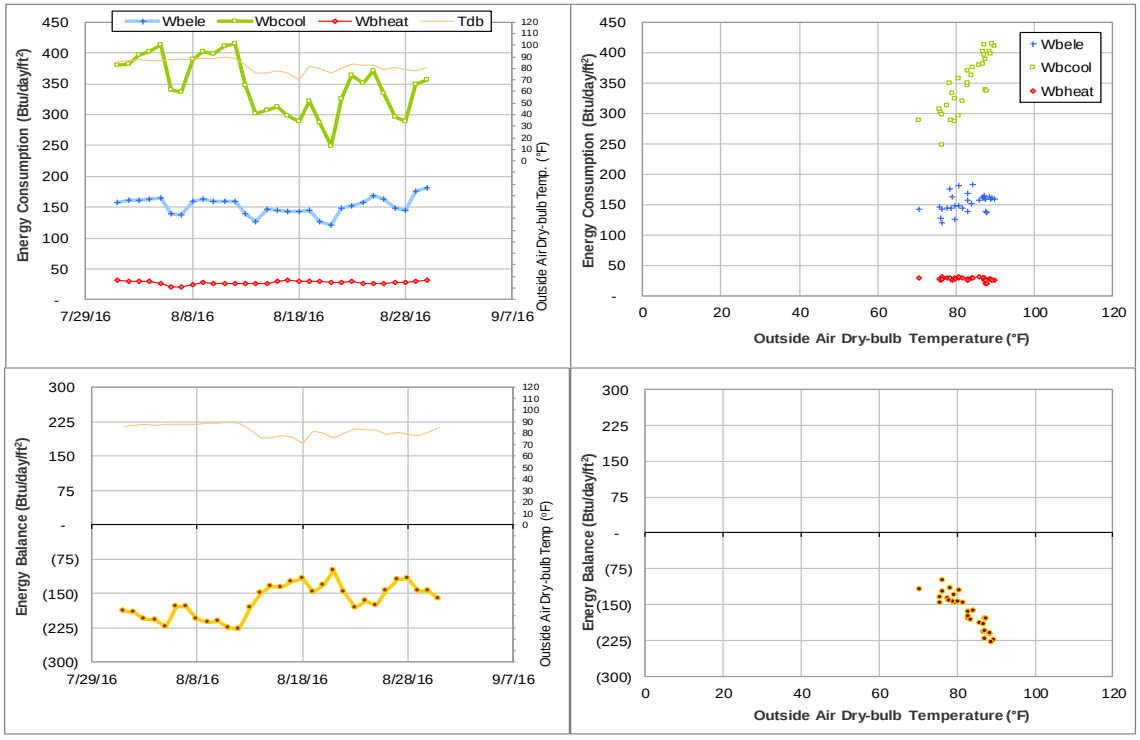


Figure IV-153 Horticulture-Forest Science Building TAMU BLDG # 1506 Energy Balance Plot during August 2016

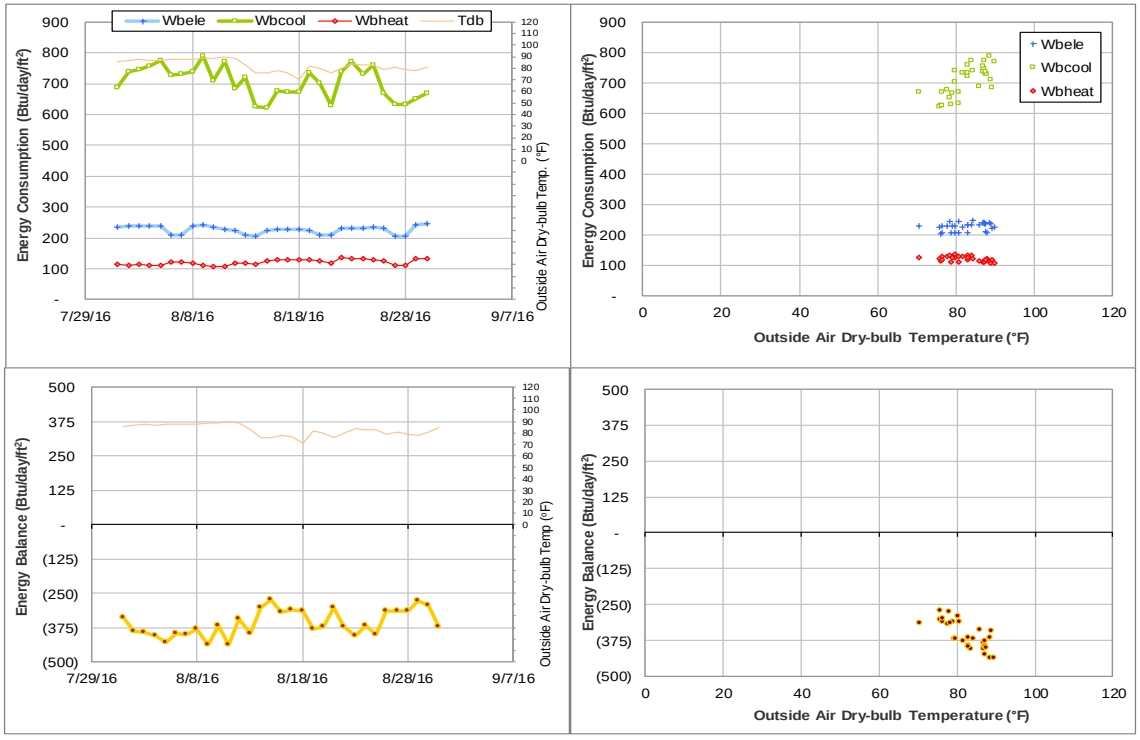


Figure IV-154 Biochemistry-Biophysics Building TAMU BLDG # 1507 Energy Balance Plot during August 2016

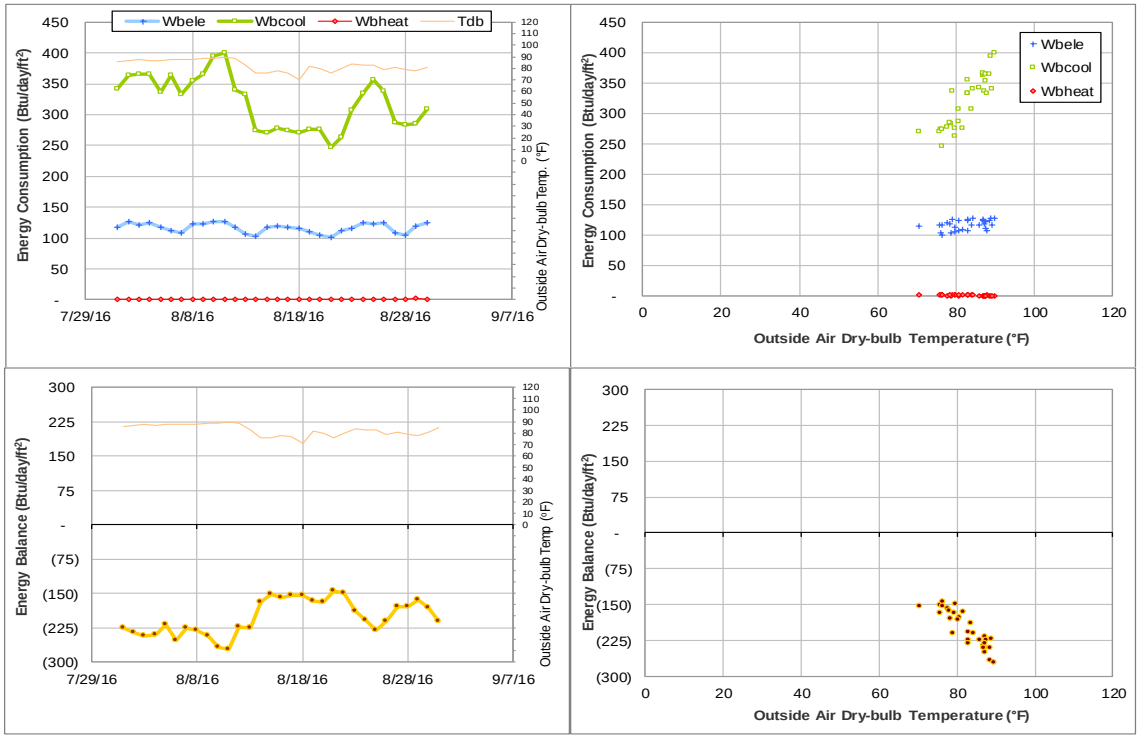


Figure IV-155 Price Hobgood Ag. Engineering Research Lab TAMU BLDG # 1508 Energy Balance Plot during August 2016

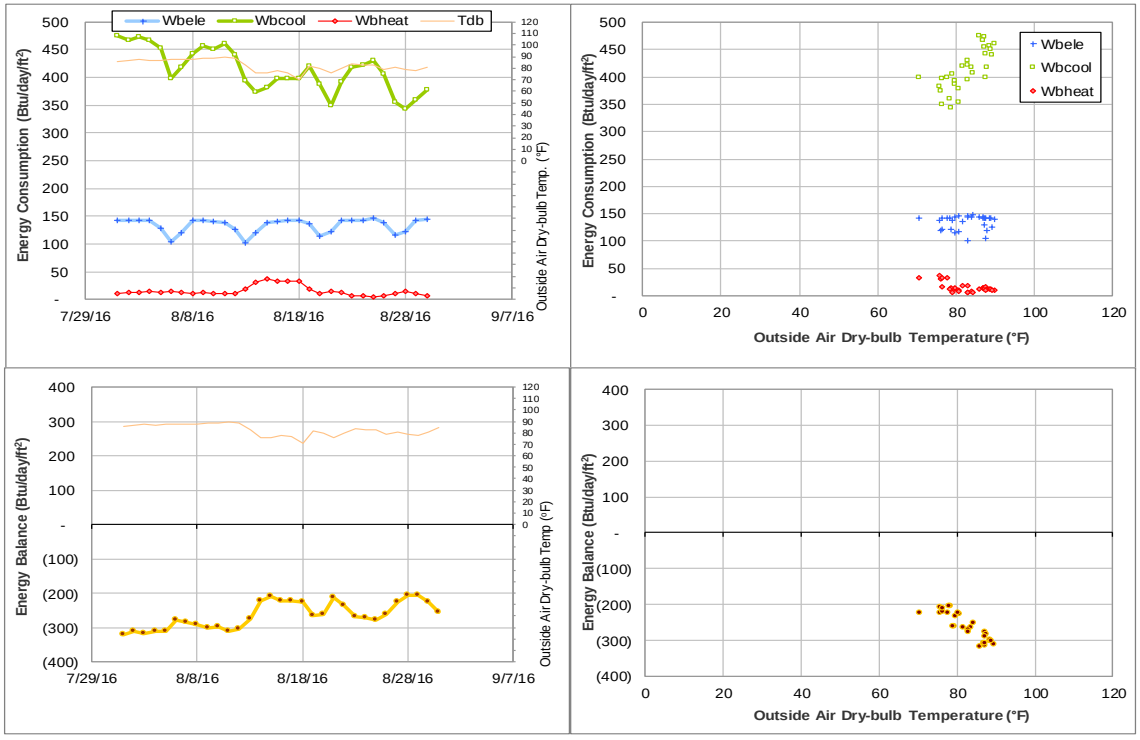


Figure IV-156 Medical Sciences Library TAMU BLDG # 1509 Energy Balance Plot during August 2016

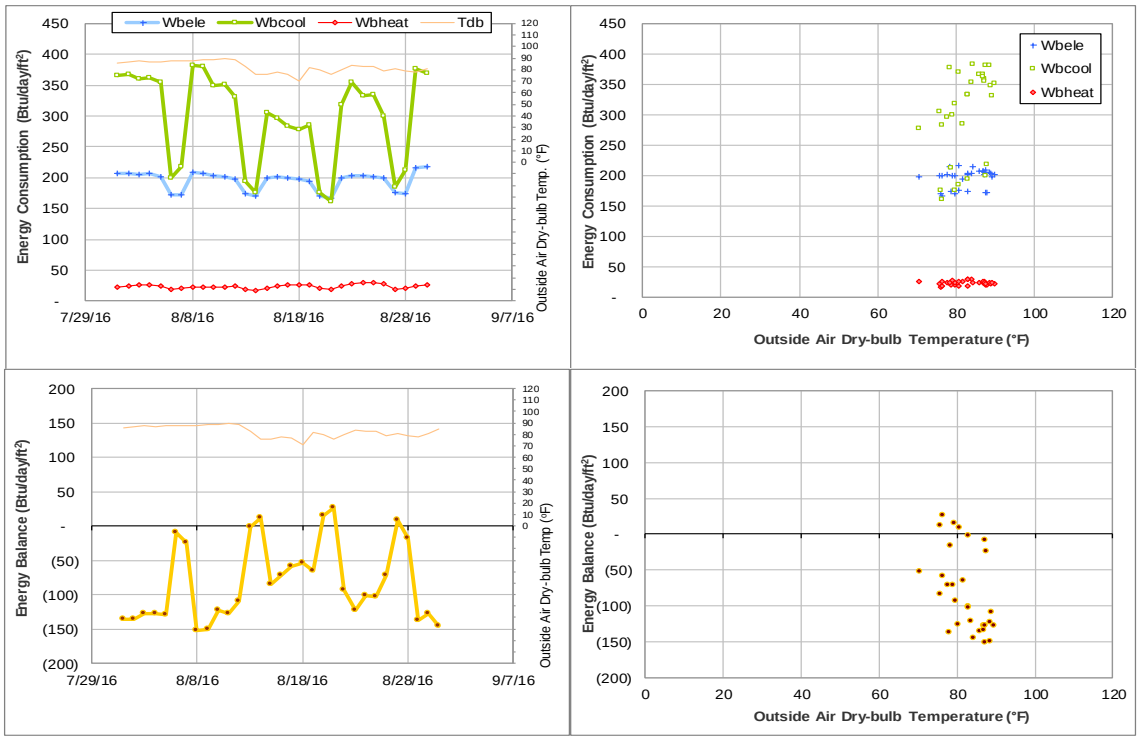


Figure IV-157 Wehner Building TAMU BLDG # 1510 Energy Balance Plot during August 2016

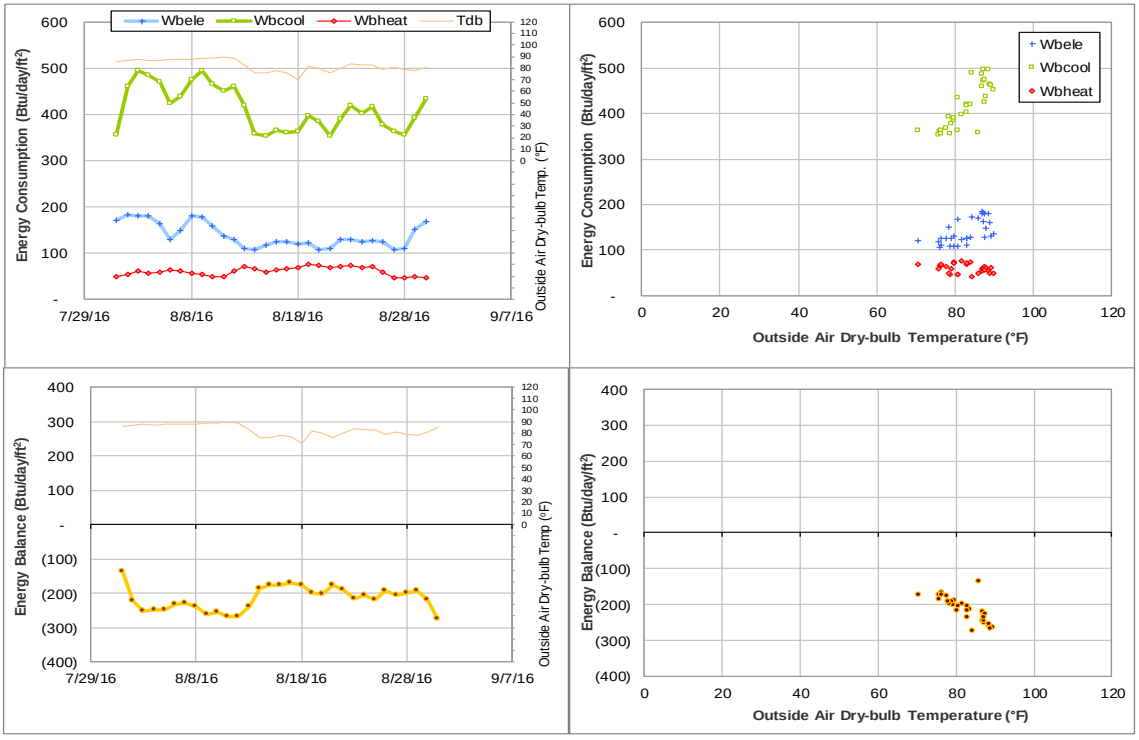


Figure IV-158 West Campus Library Facility TAMU BLDG # 1511 Energy Balance Plot during August 2016

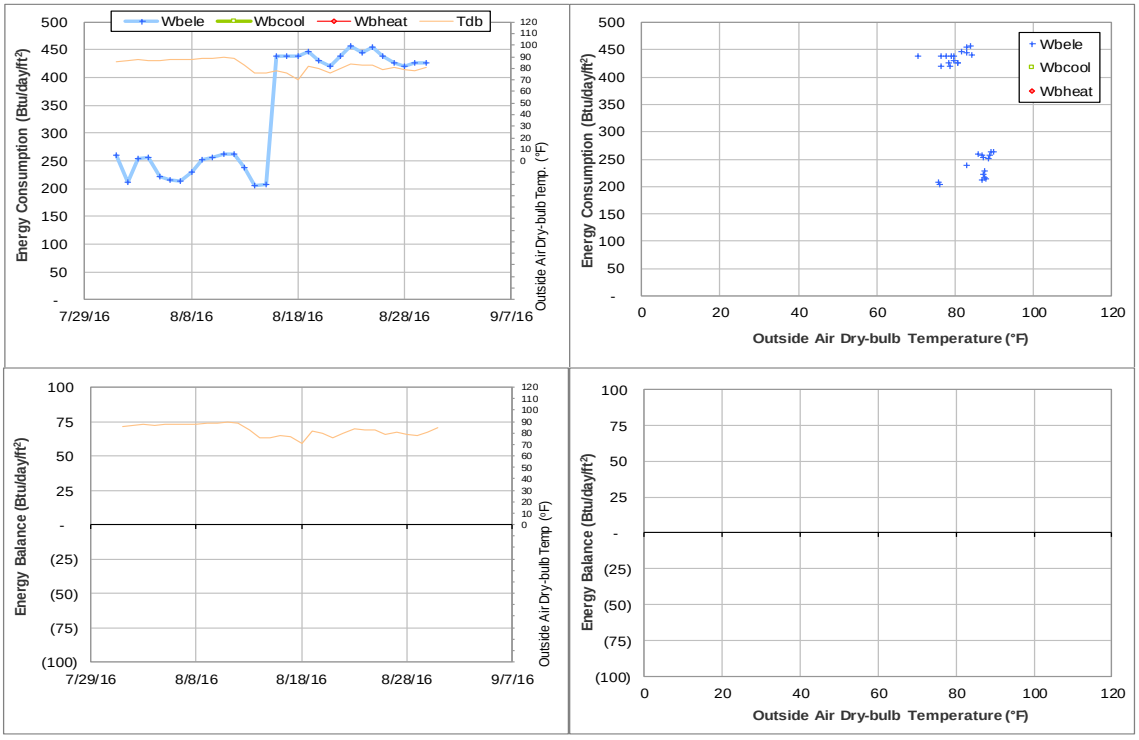


Figure IV-159 Southern Crop Improvement Greenhouse TAMU BLDG # 1512 Energy Balance Plot during August 2016

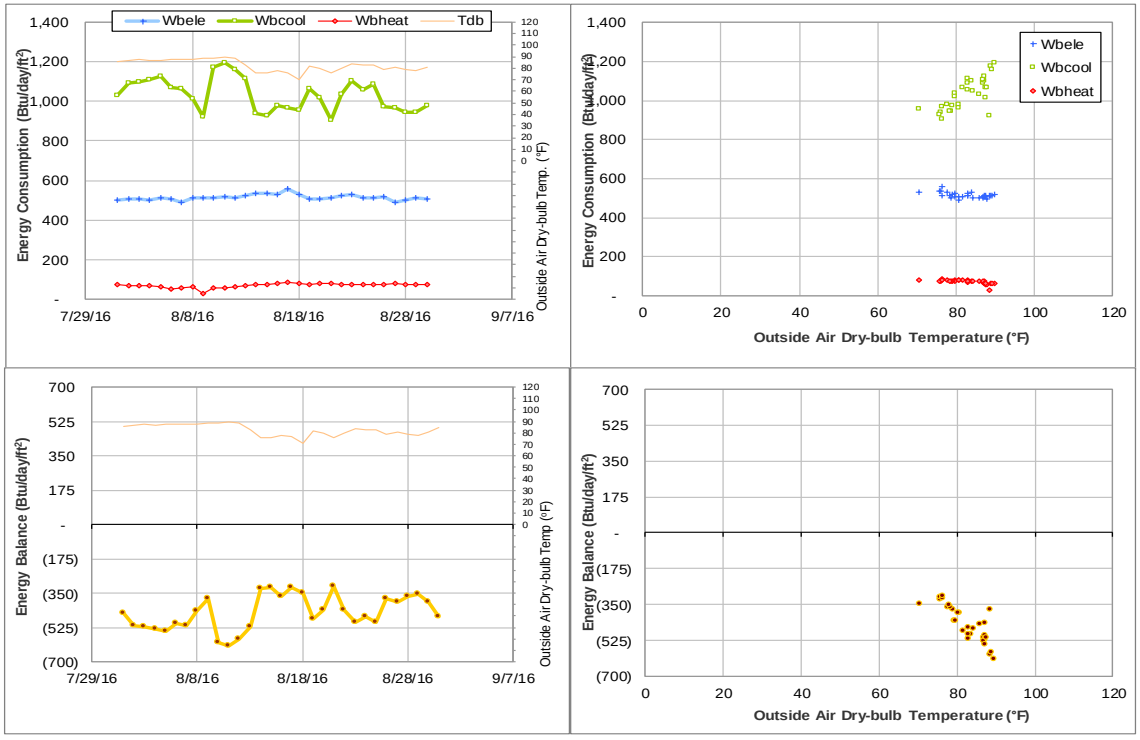


Figure IV-160 Borlaug Center for Southern Crop Improvement TAMU BLDG # 1513 Energy Balance Plot during August 2016

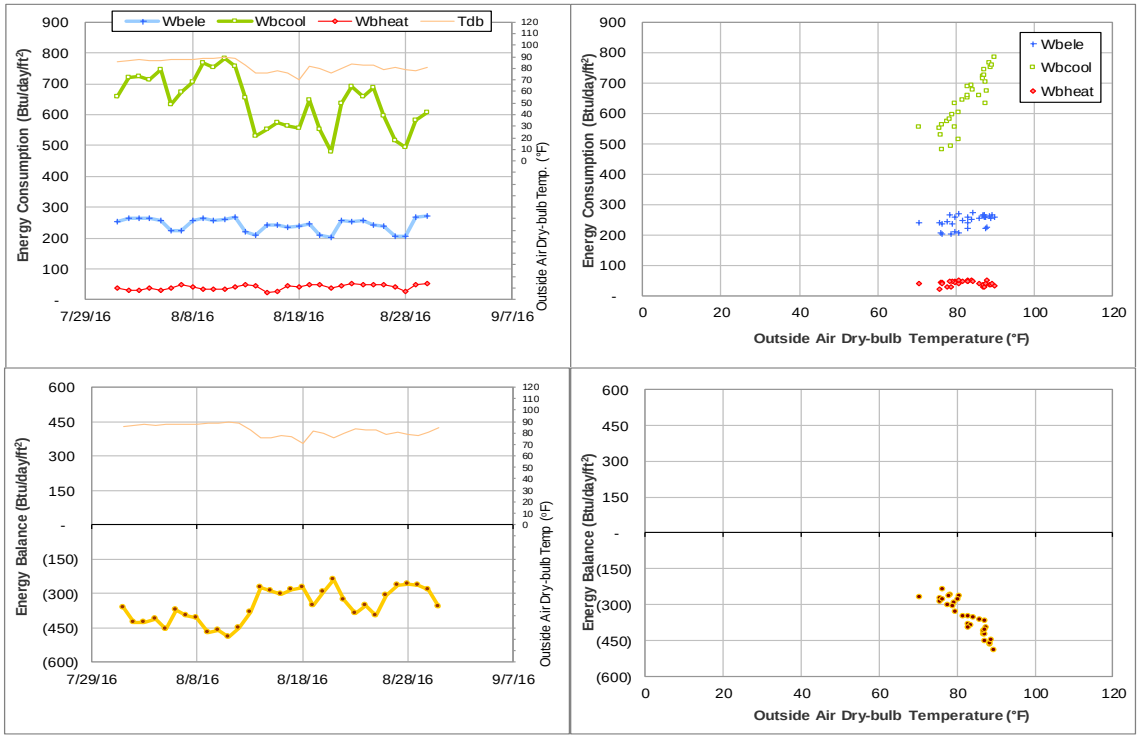


Figure IV-161 TX School of Rural Public Health TAMU BLDG # 1518 Energy Balance Plot during August 2016

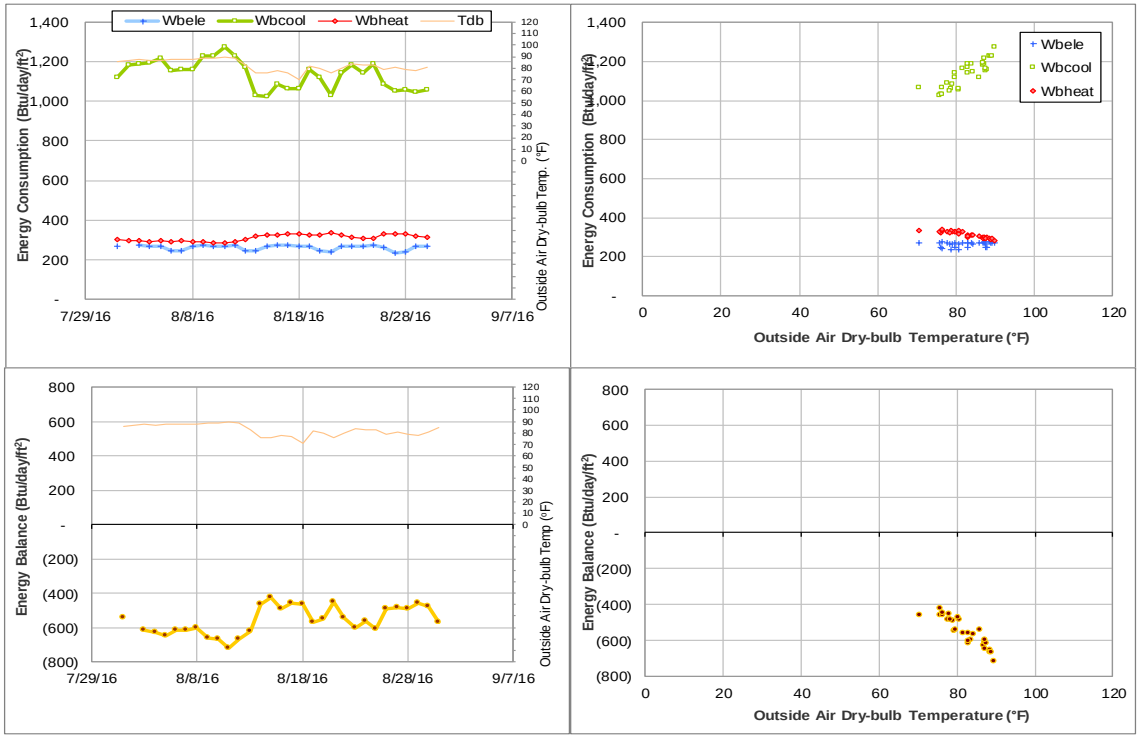


Figure IV-162 Nuclear Magnetic Resonance Facility TAMU BLDG # 1525 Energy Balance Plot during August 2016

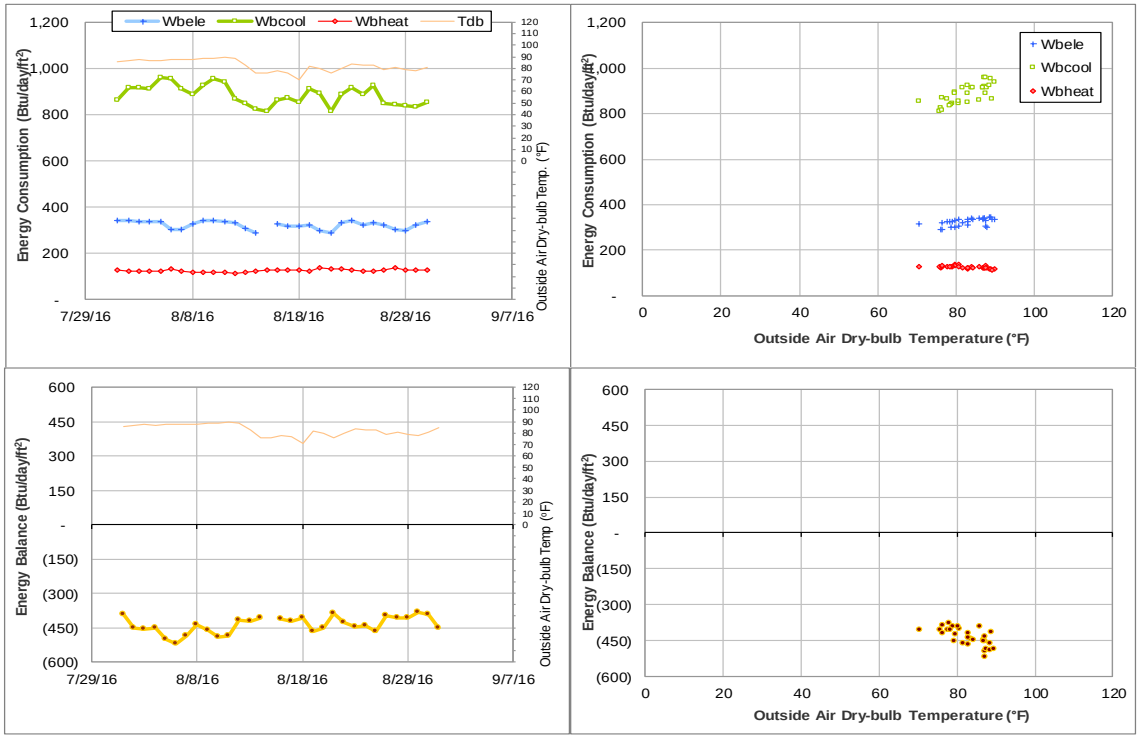


Figure IV-163 Interdisciplinary Life Sciences Building TAMU BLDG # 1530 Energy Balance Plot during August 2016

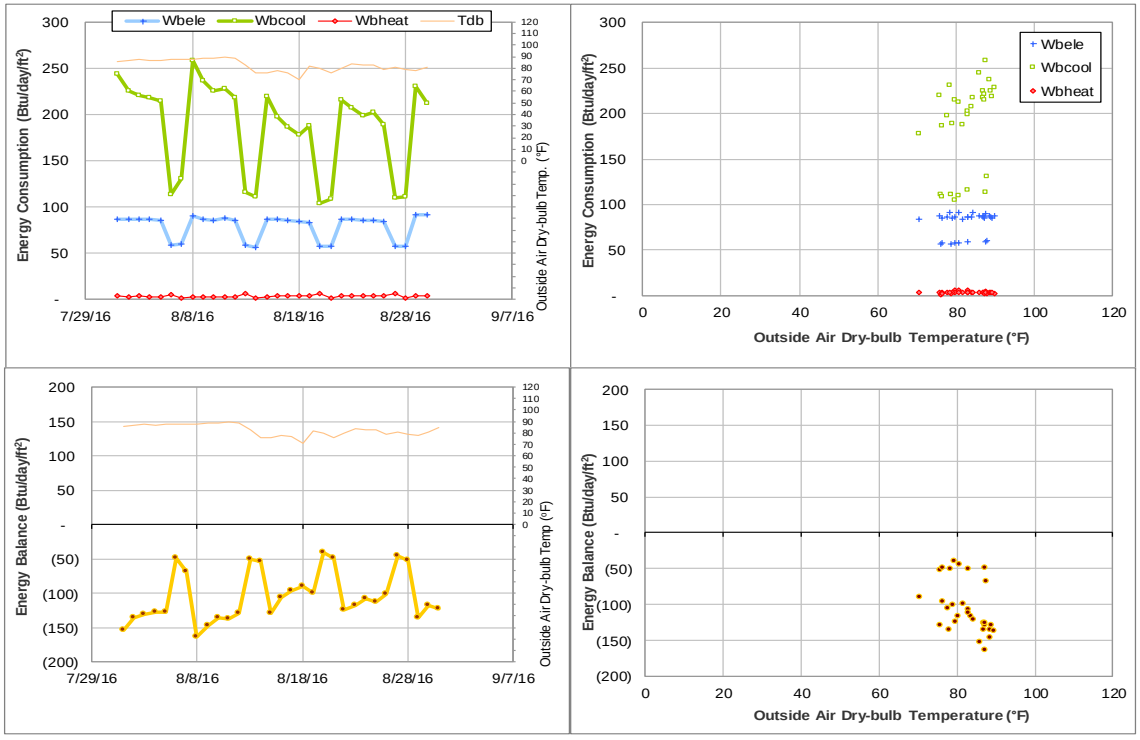


Figure IV-164 Agriculture and Life Sciences Building TAMU BLDG # 1535 Energy Balance Plot during August 2016

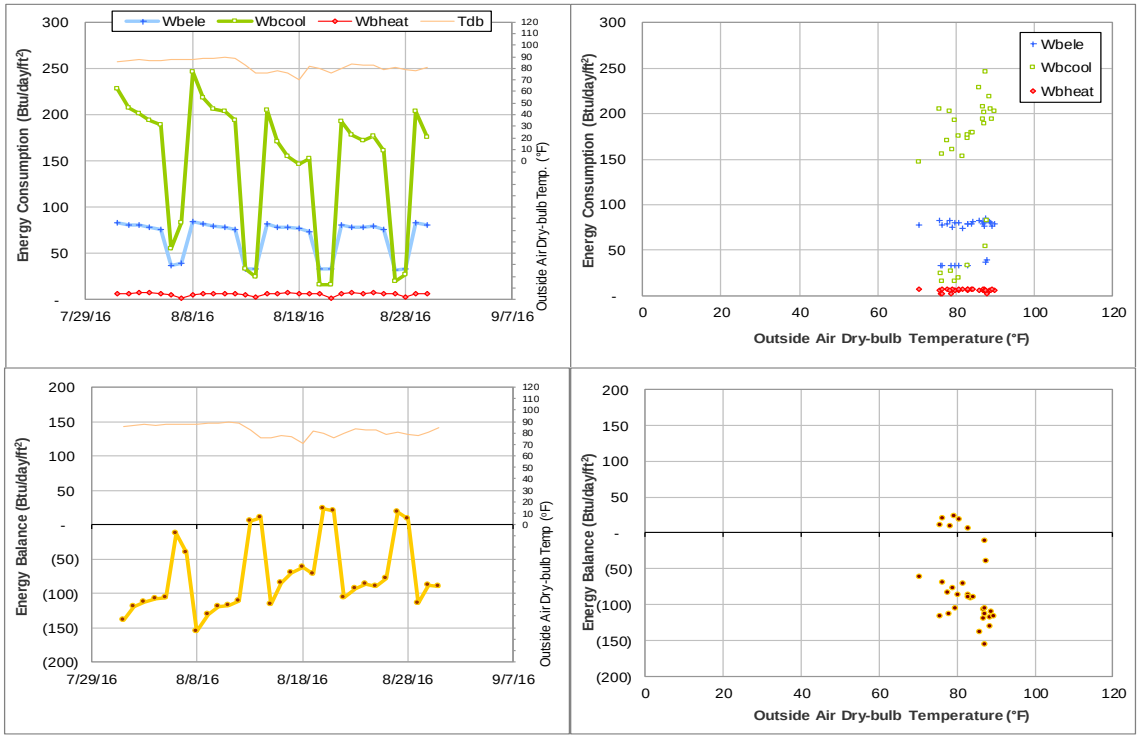


Figure IV-165 AgriLife Services Building TAMU BLDG # 1536 Energy Balance Plot during August 2016

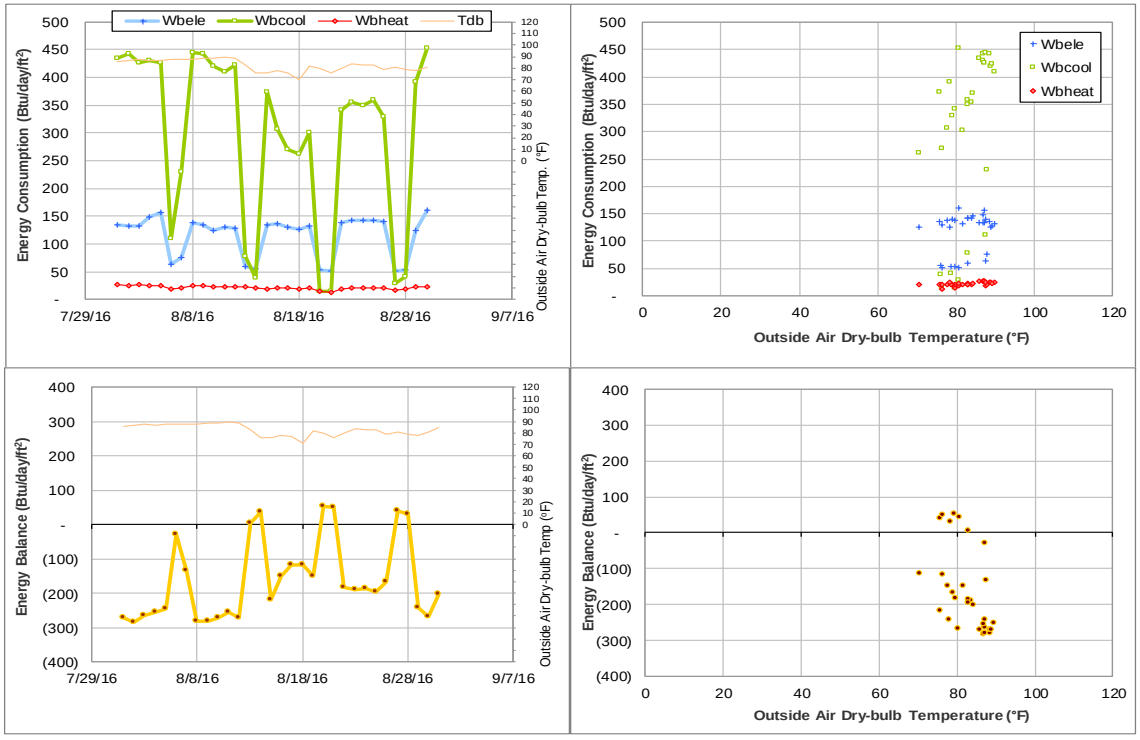


Figure IV-166 Agriculture Program Visitors Center TAMU BLDG # 1538 Energy Balance Plot during August 2016

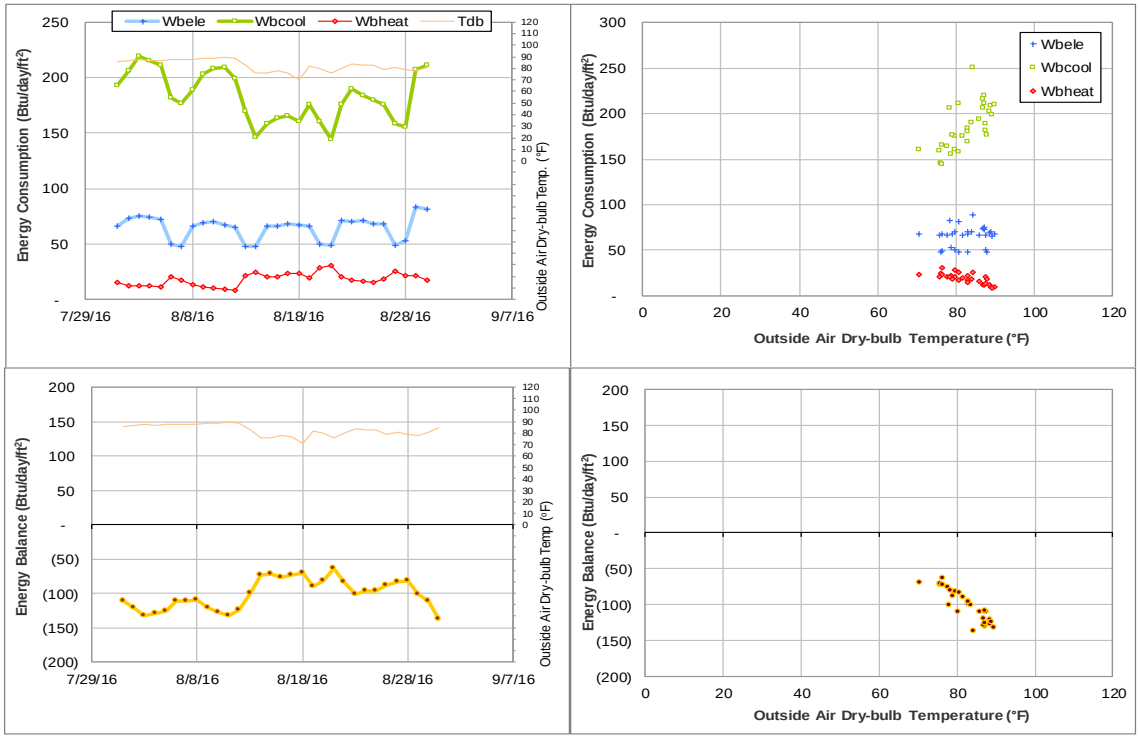


Figure IV-167 Physical Education Activity Program Building TAMU BLDG # 1540 Energy Balance Plot during August 2016

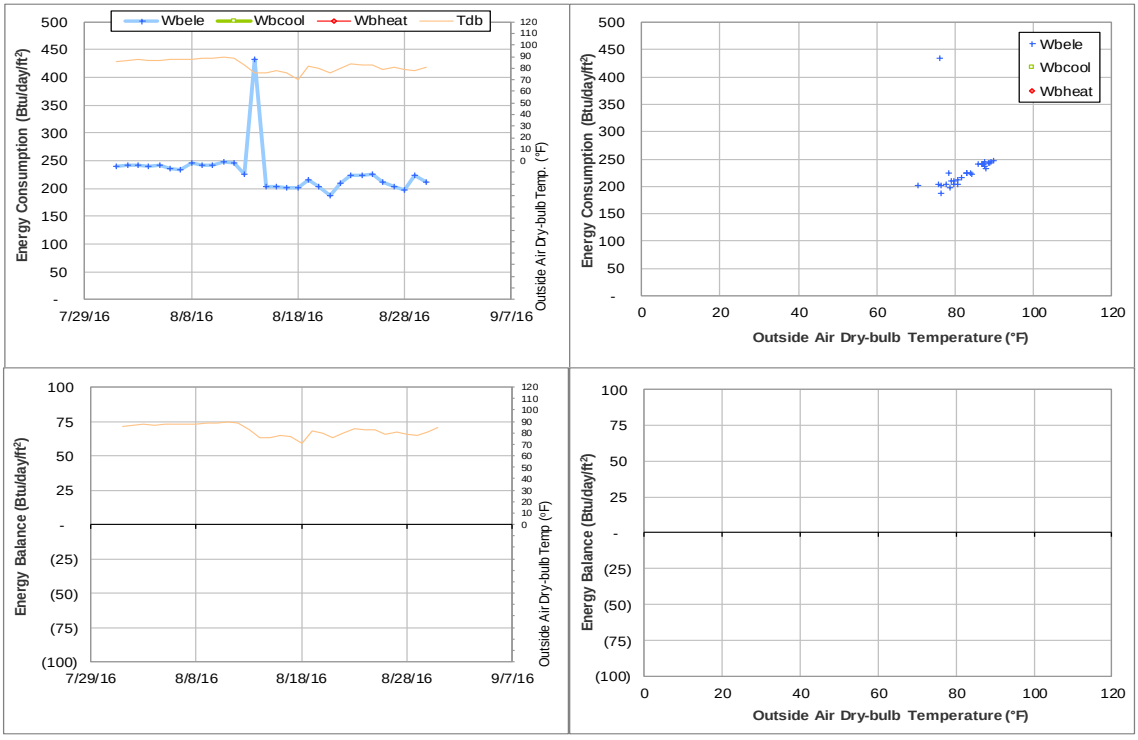


Figure IV-168 Olsen Field at Bluebell Park TAMU BLDG # 1550 Energy Balance Plot during August 2016

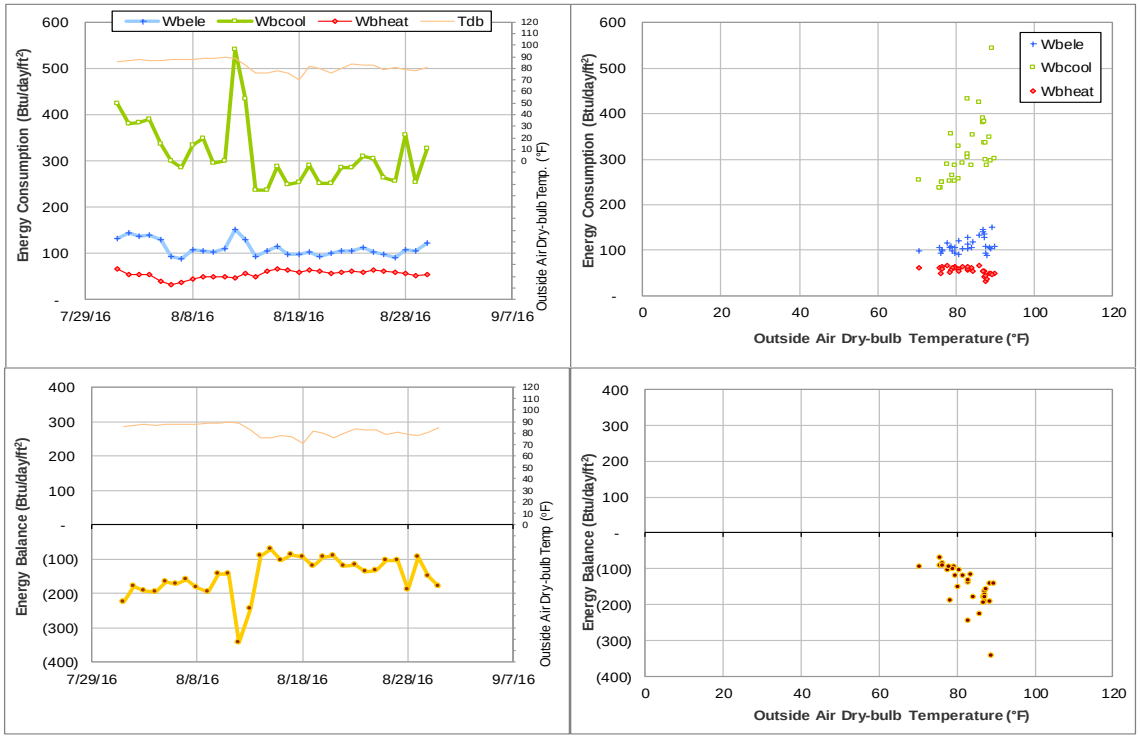


Figure IV-169 Reed Arena and Cox-McFerrin Center TAMU BLDG # 1554-1558 Energy Balance Plot during August 2016

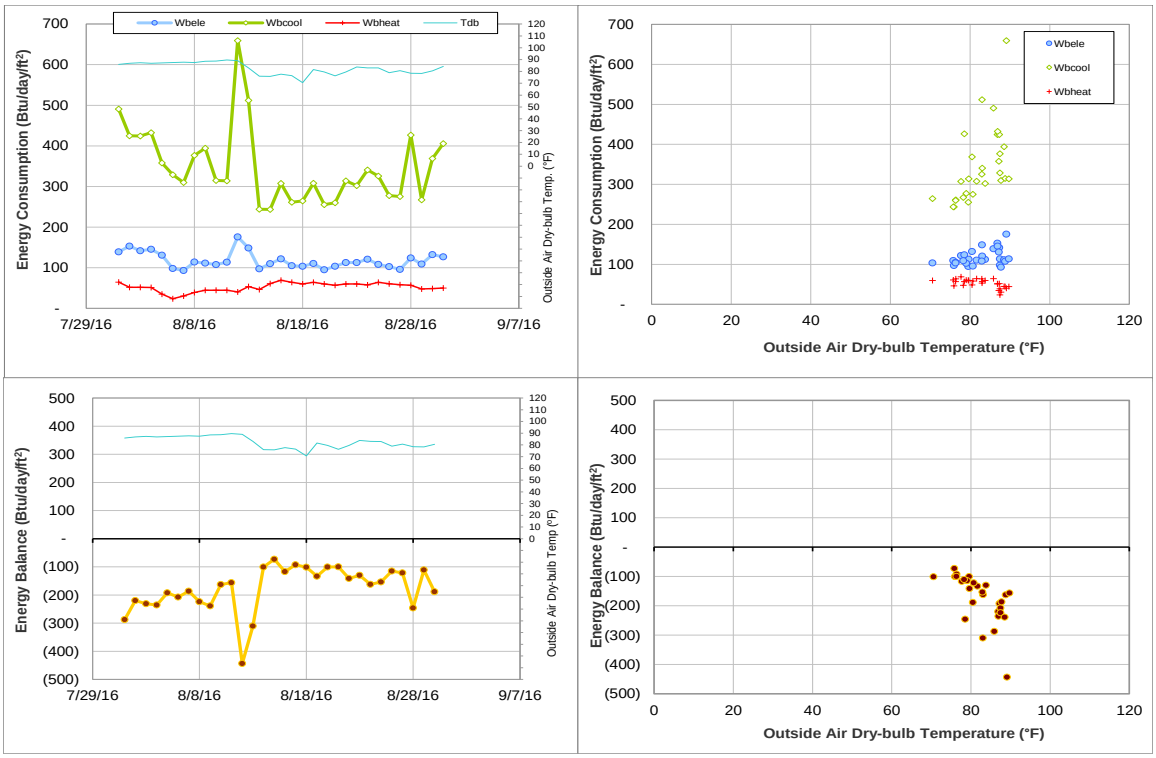


Figure IV-170 Reed Arena TAMU BLDG # 1554 Energy Balance Plot during August 2016

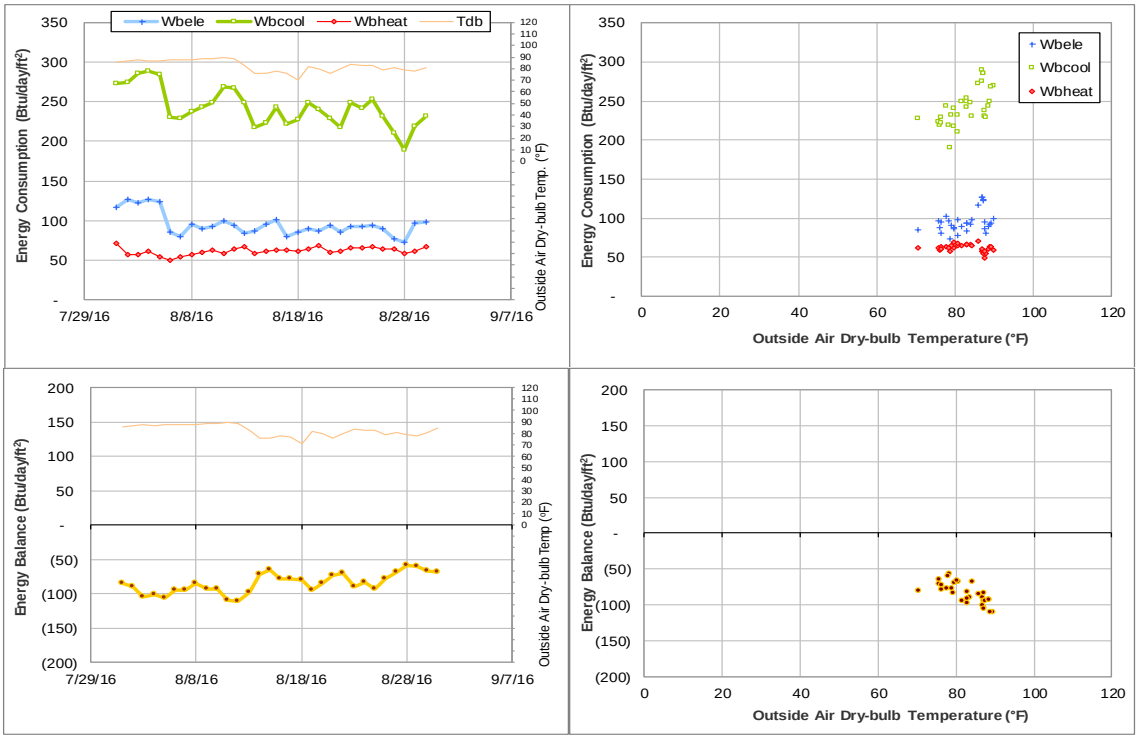


Figure IV-171 Cox-McFerrin Center for Aggie Basketball TAMU BLDG # 1558 Energy Balance Plot during August 2016

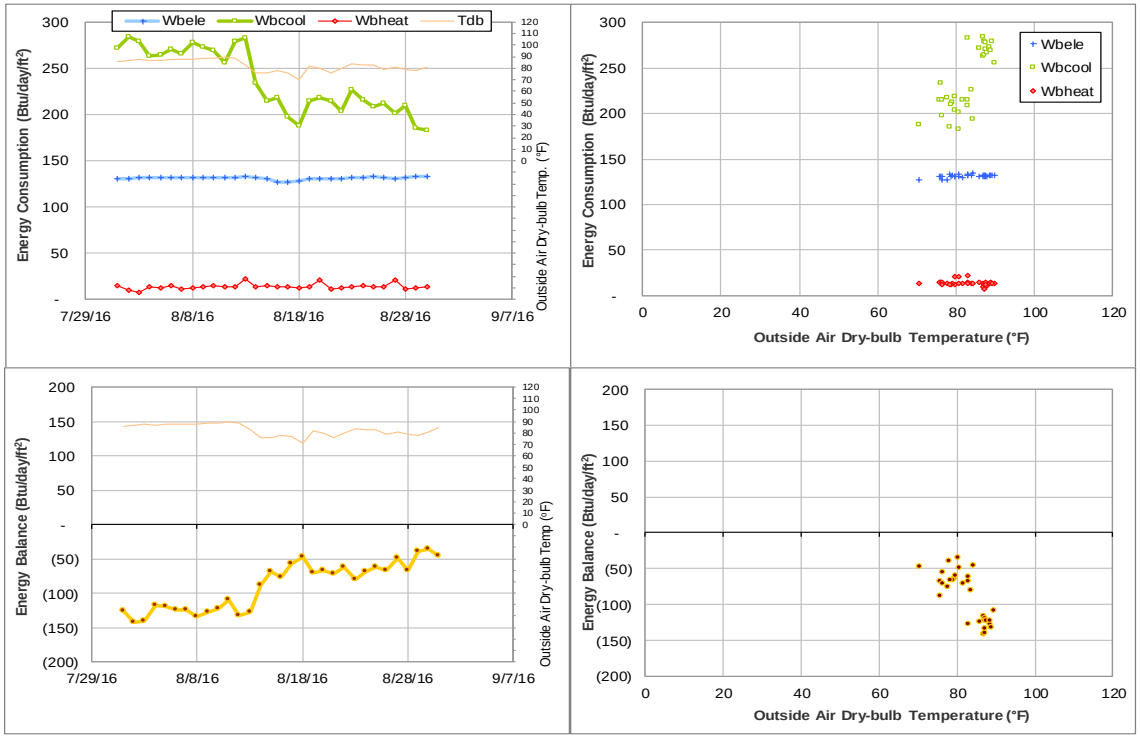


Figure IV-172 West Campus Parking Garage TAMU BLDG # 1559 Energy Balance Plot during August 2016

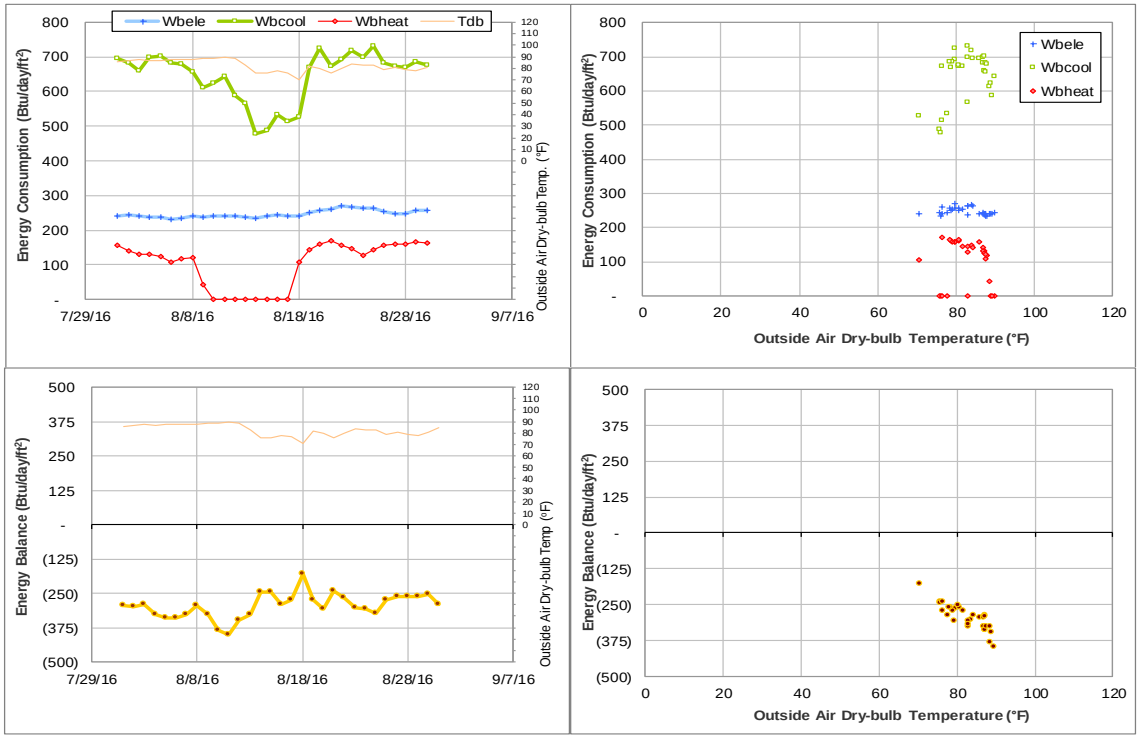


Figure IV-173 Student Recreation Center TAMU BLDG # 1560 Energy Balance Plot during August 2016

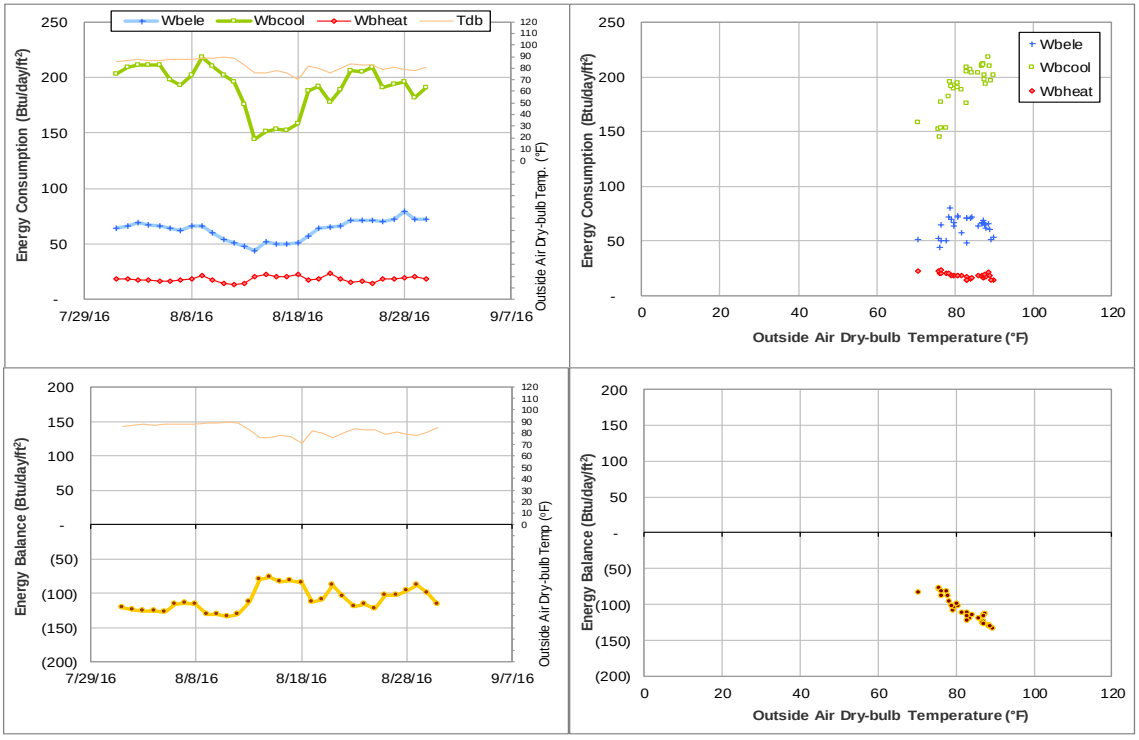


Figure IV-174 White Creek Apartment 1 and White Creek Apts Activity Center TAMU BLDG # 1589 Energy Balance Plot during August 2016

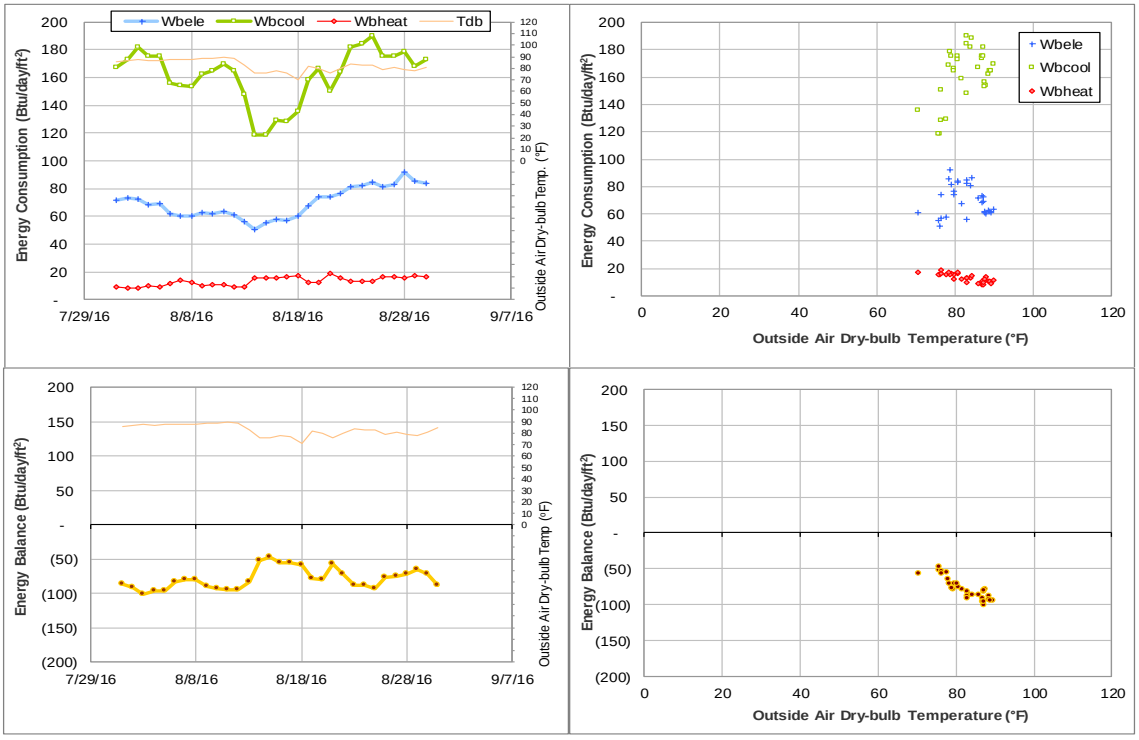


Figure IV-175 White Creek Apartment 2 TAMU BLDG # 1591 Energy Balance Plot during August 2016

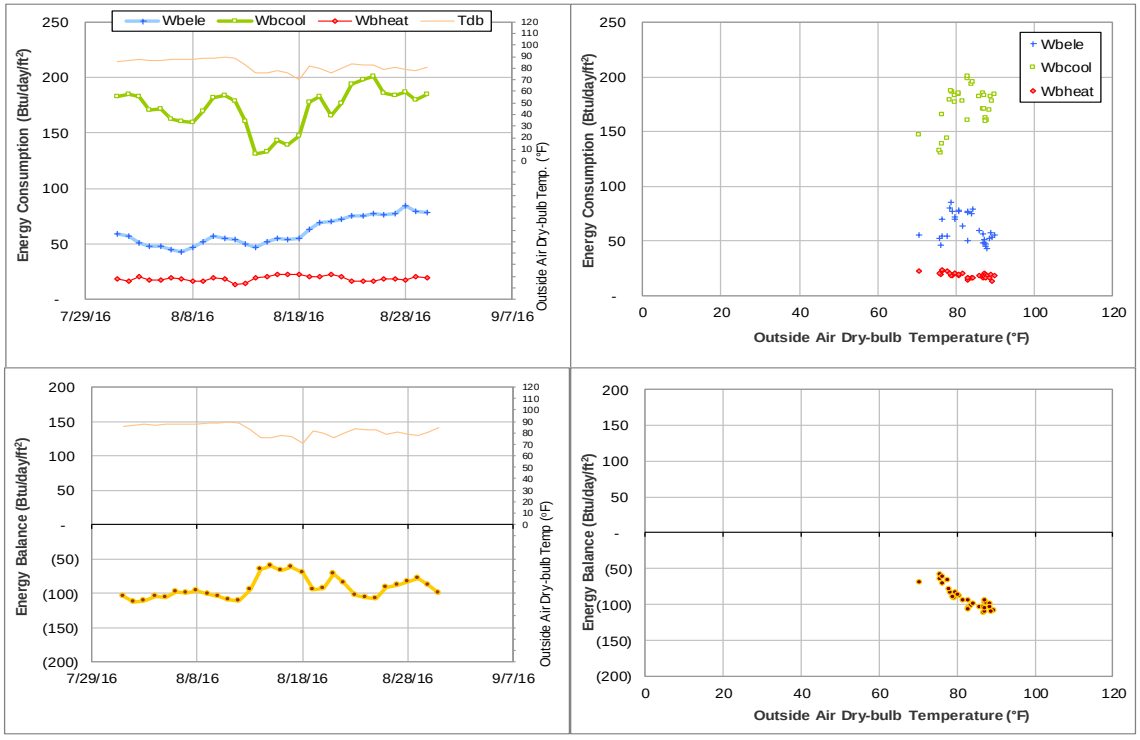


Figure IV-176 White Creek Apartment 3 TAMU BLDG # 1592 Energy Balance Plot during August 2016

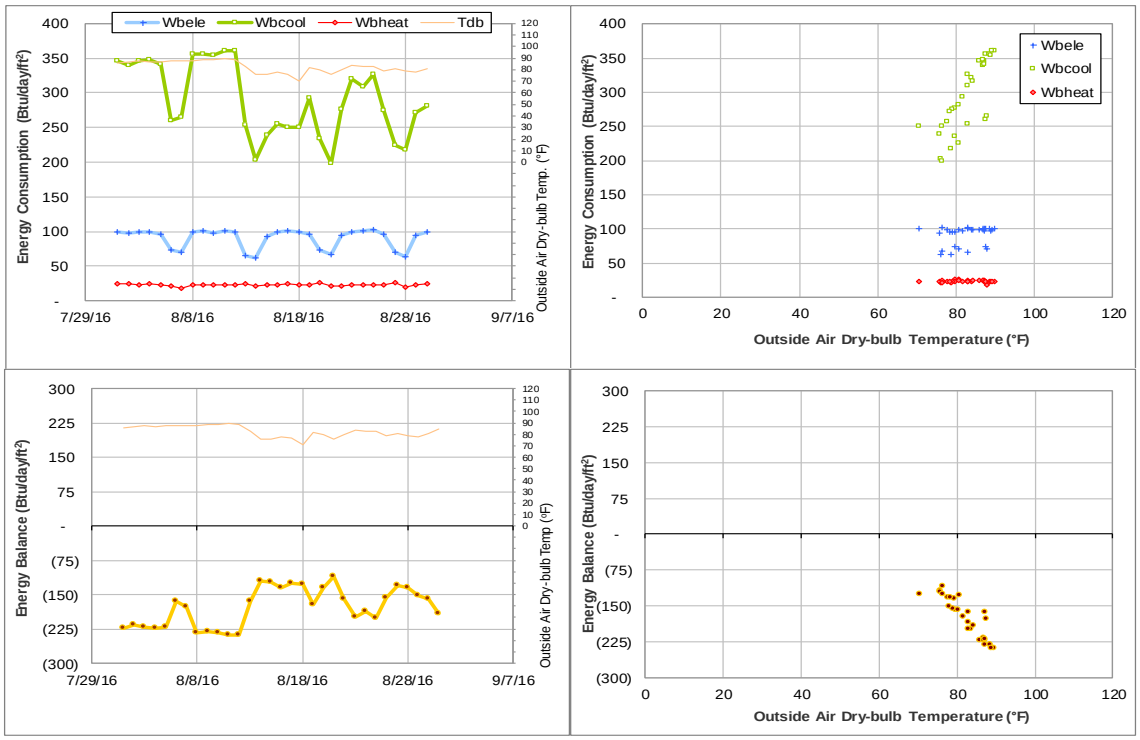


Figure IV-177 Gilchrist TTI Building TAMU BLDG # 1600 Energy Balance Plot during August 2016

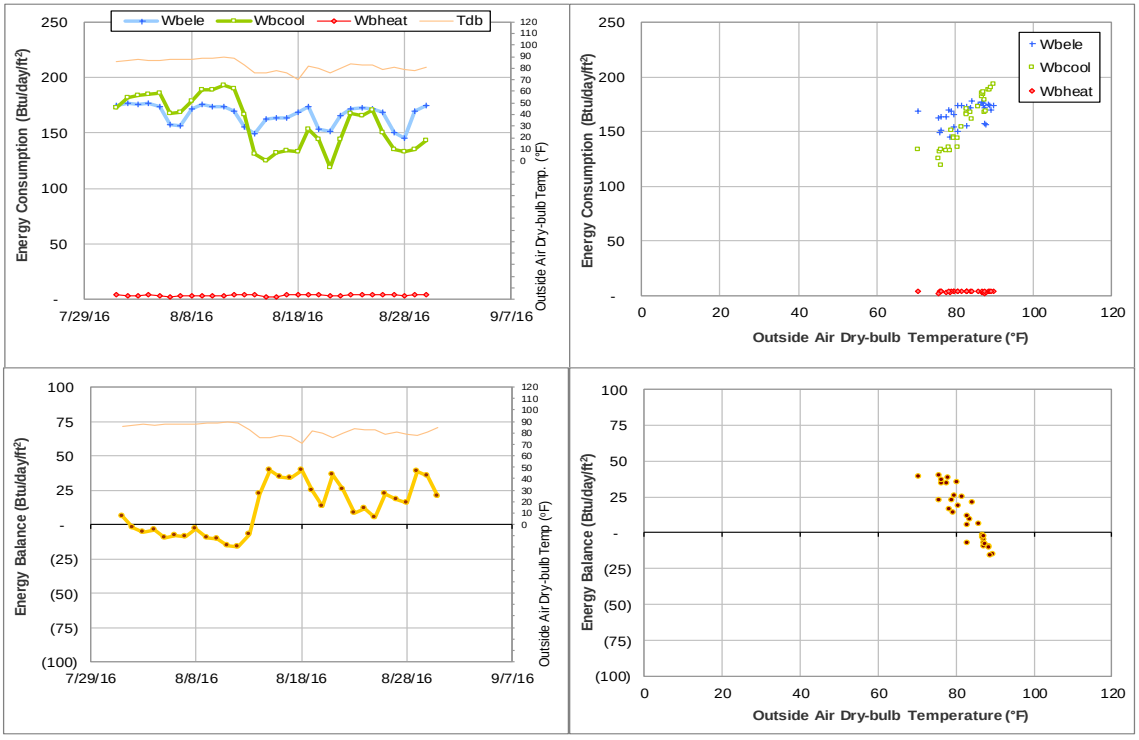


Figure IV-178 International Ocean Discovery Building TAMU BLDG # 1601 Energy Balance Plot during August 2016

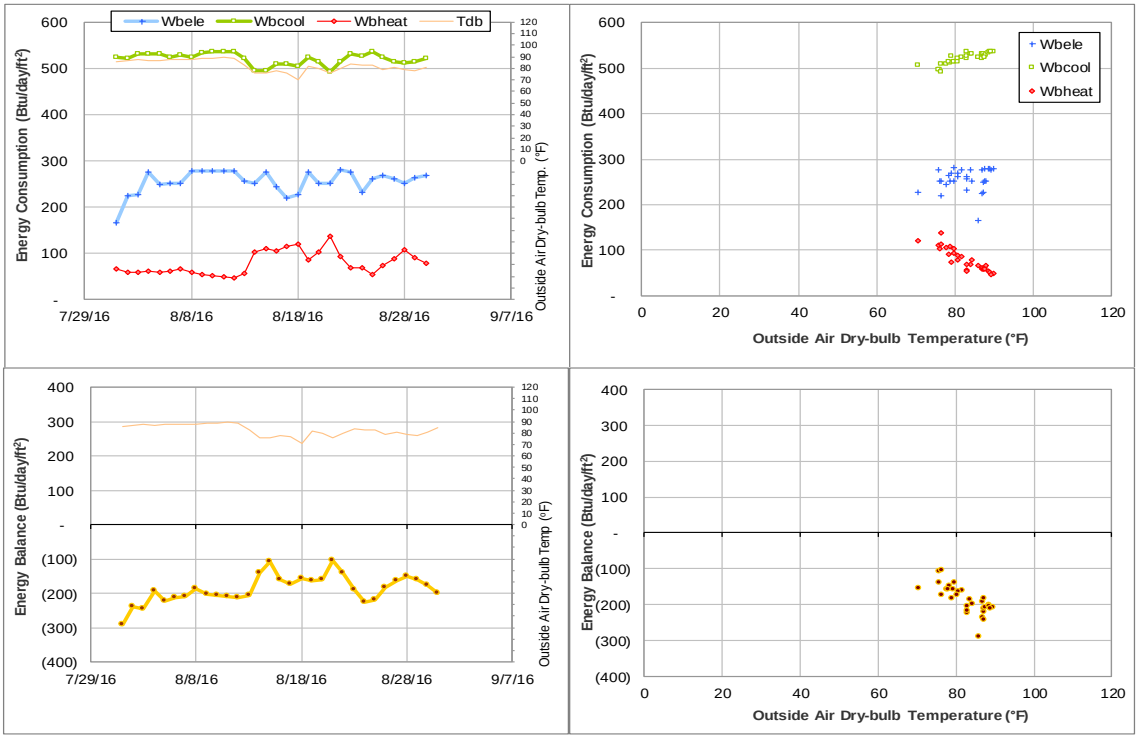


Figure IV-179 Offshore Technology Research Center TAMU BLDG # 1604 Energy Balance Plot during August 2016

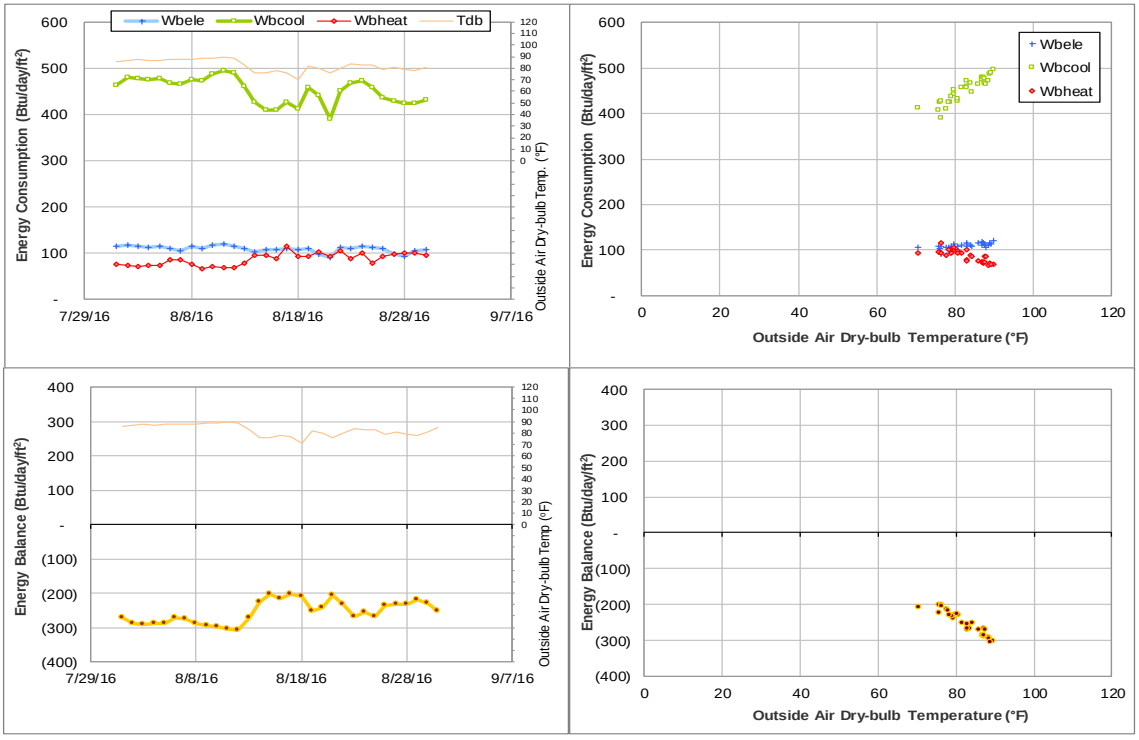


Figure IV-180 George Bush Presidential Library & Museum TAMU BLDG # 1606 Energy Balance Plot during August 2016

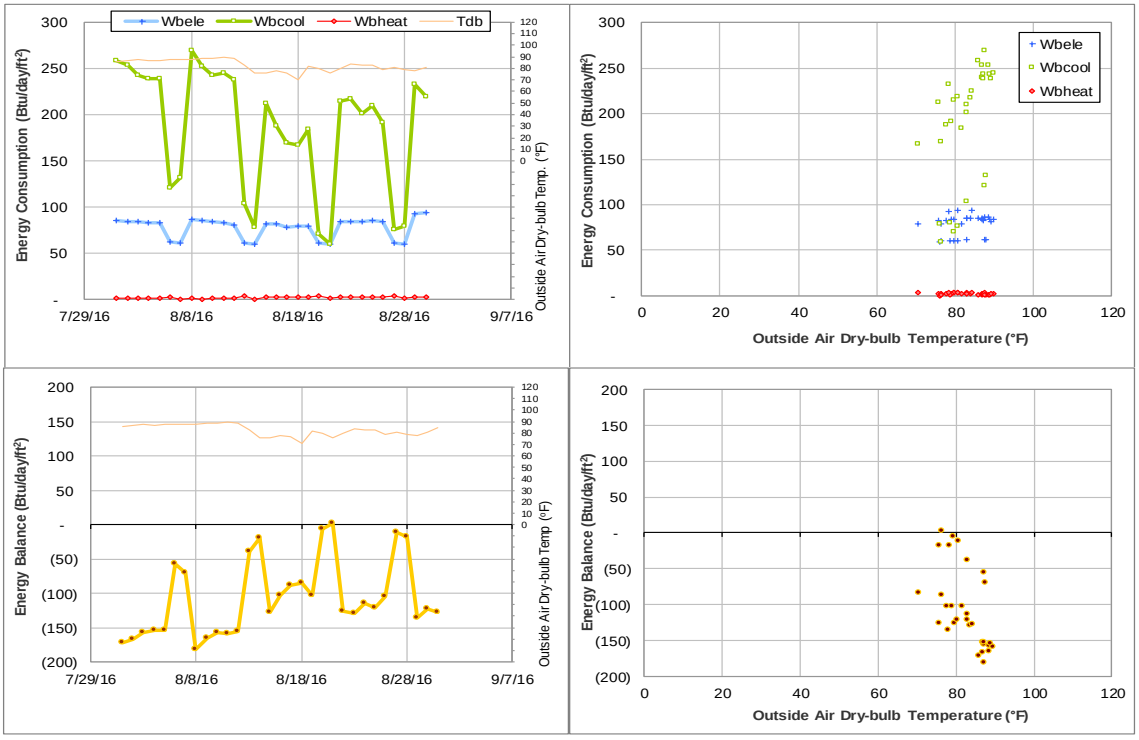


Figure IV-181 Allen Building TAMU BLDG # 1607 Energy Balance Plot during August 2016

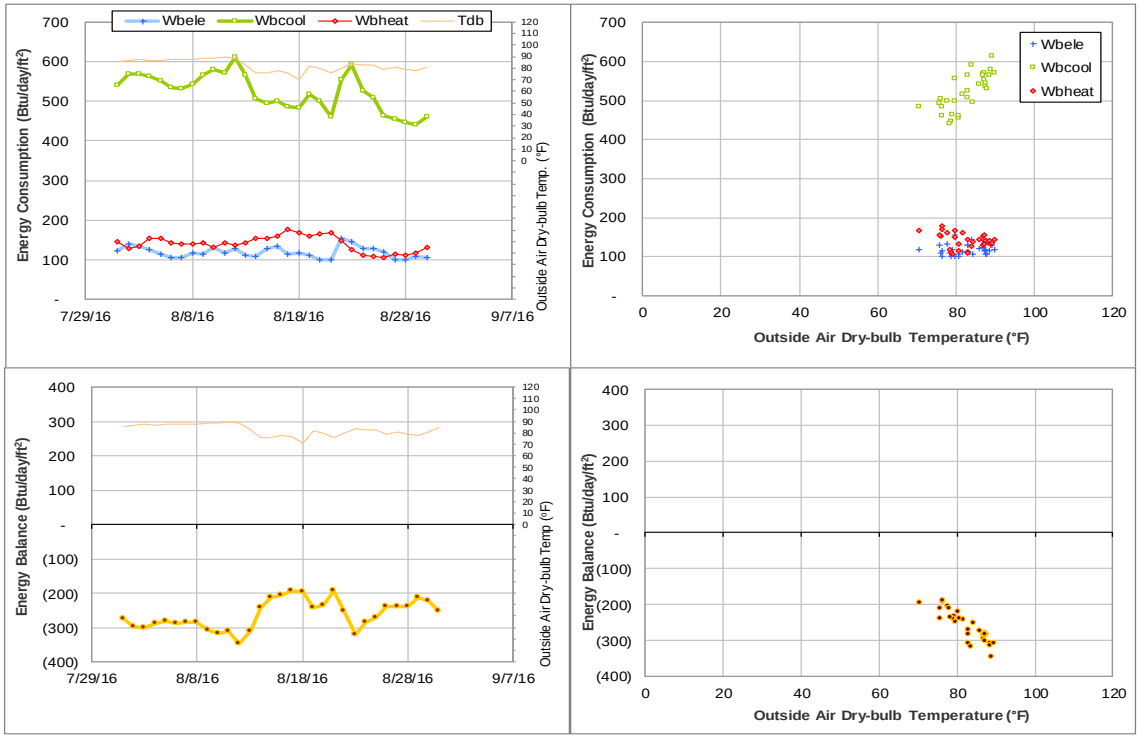


Figure IV-182 Annenberg Presidential Conference Center TAMU BLDG # 1608 Energy Balance Plot during August 2016

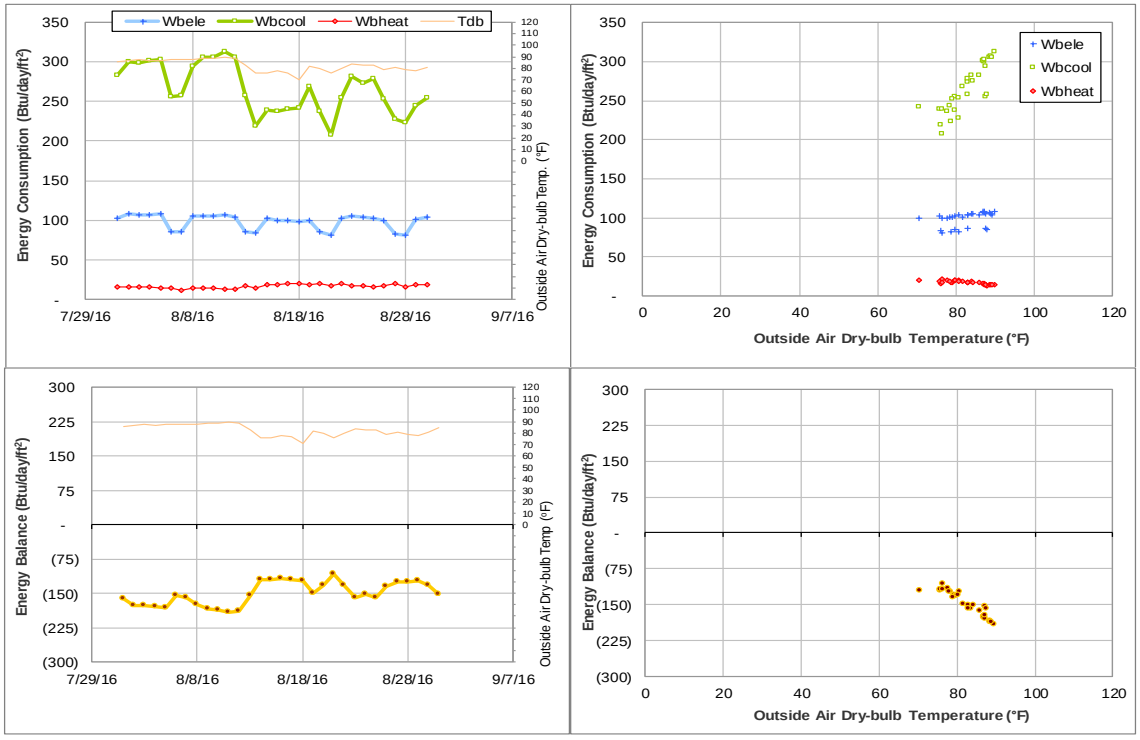


Figure IV-183 TTI Headquarters TAMU BLDG # 1609 Energy Balance Plot during August 2016

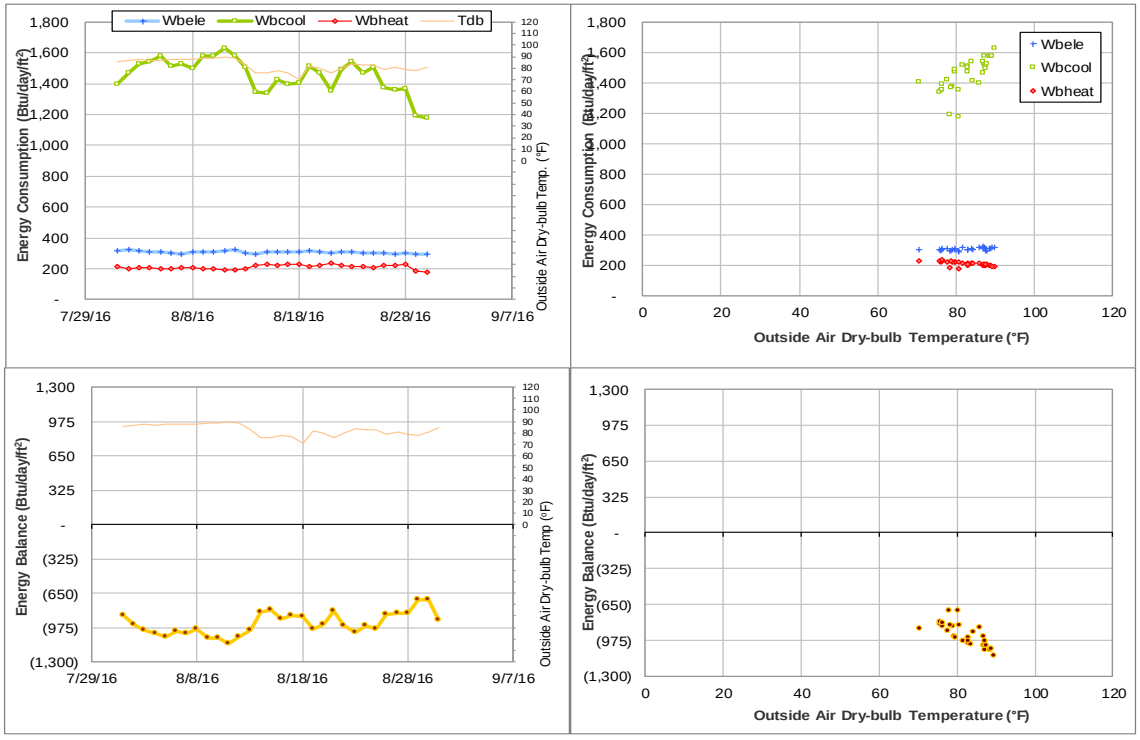


Figure IV-184 Engineering Research Building TAMU BLDG # 1611 Energy Balance Plot during August 2016

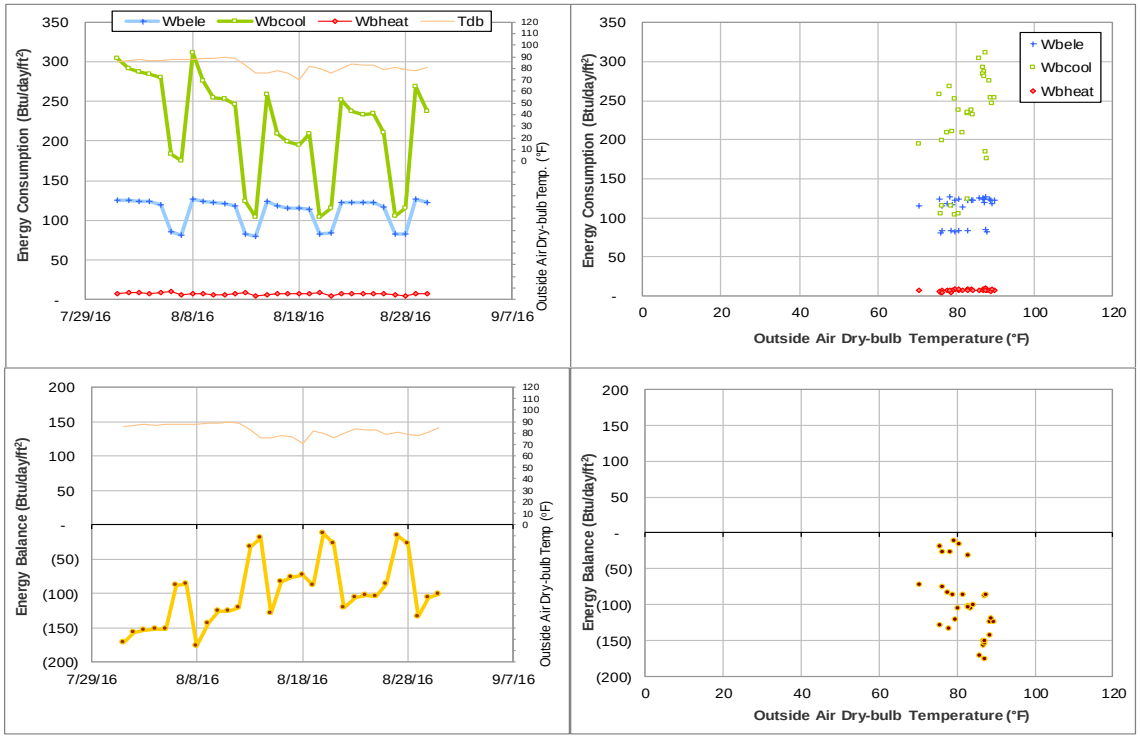


Figure IV-185 General Services Complex TAMU BLDG # 1800 Energy Balance Plot during August 2016

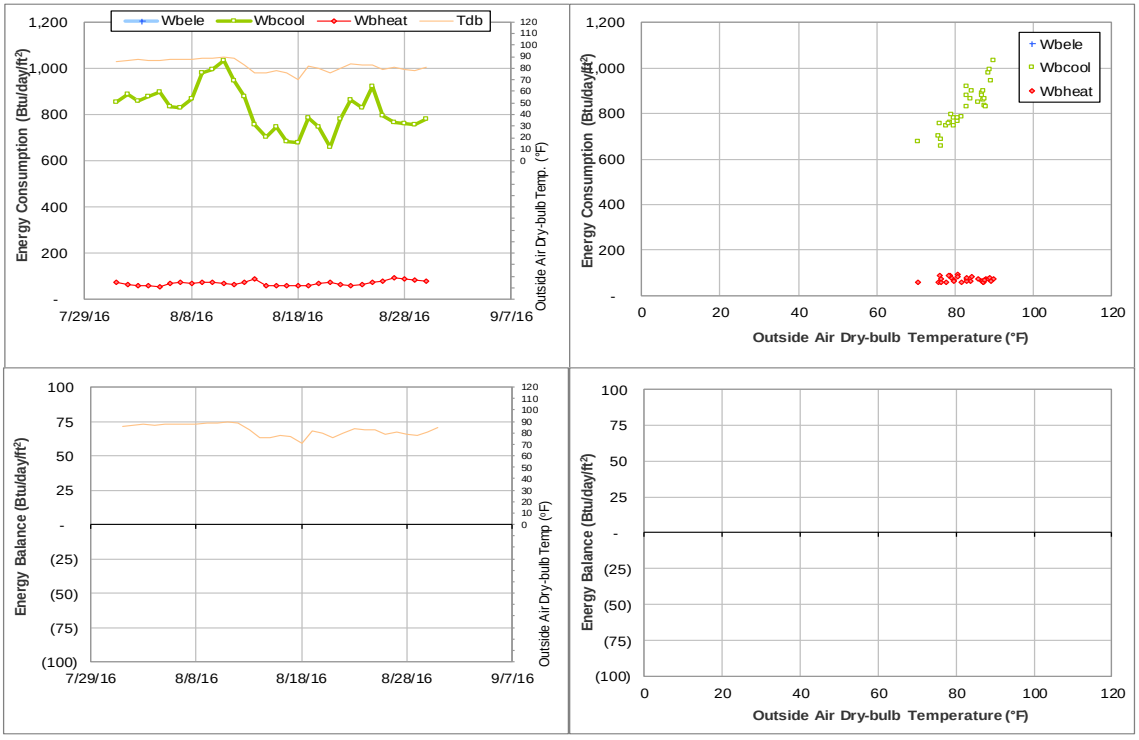


Figure IV-186 Office of the State Chemist Building TAMU BLDG # 1810 Energy Balance Plot during August 2016

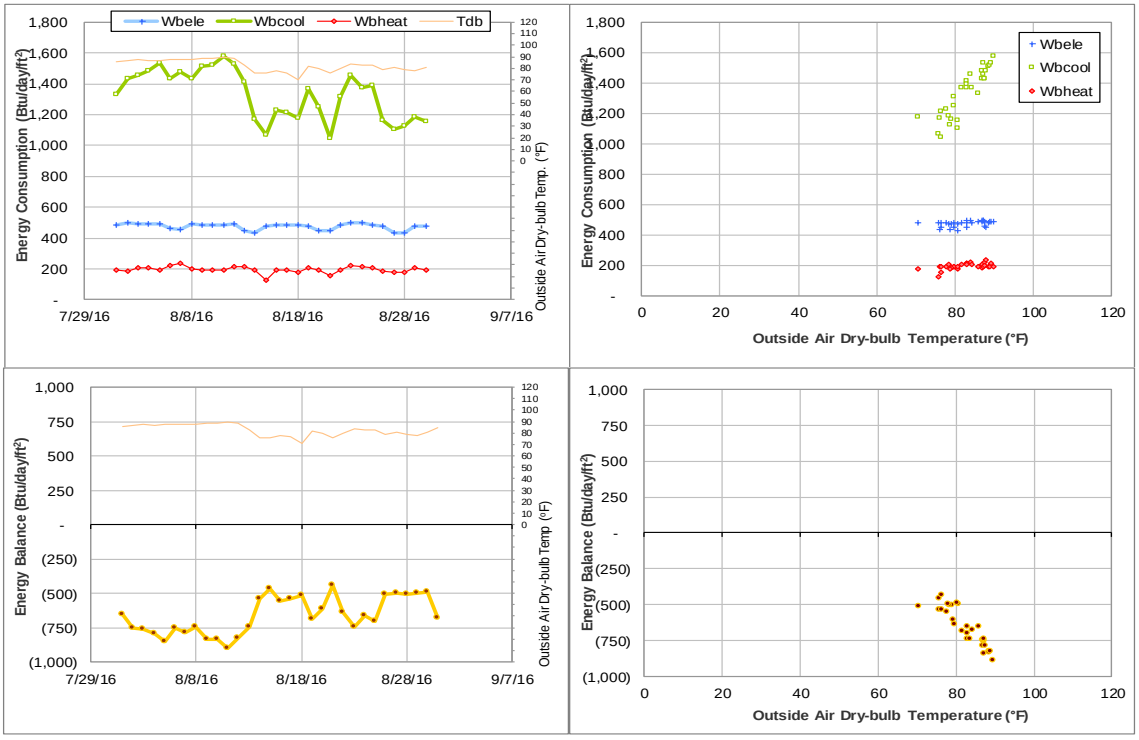


Figure IV-187 Vet Med Research Bldg Addition TAMU BLDG # 1811 Energy Balance Plot during August 2016

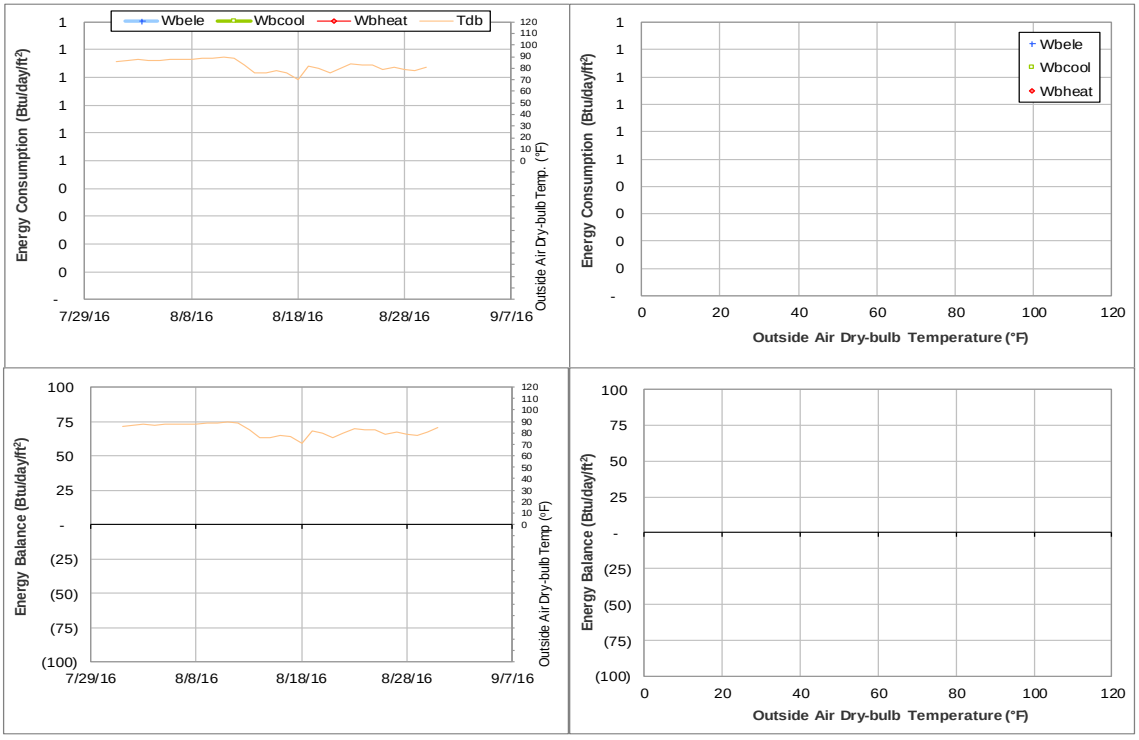


Figure IV-188 Veterinary Medicine Building 1, 2, and 3 TAMU BLDG # 1812-1813-1814 Energy Balance Plot during August 2016

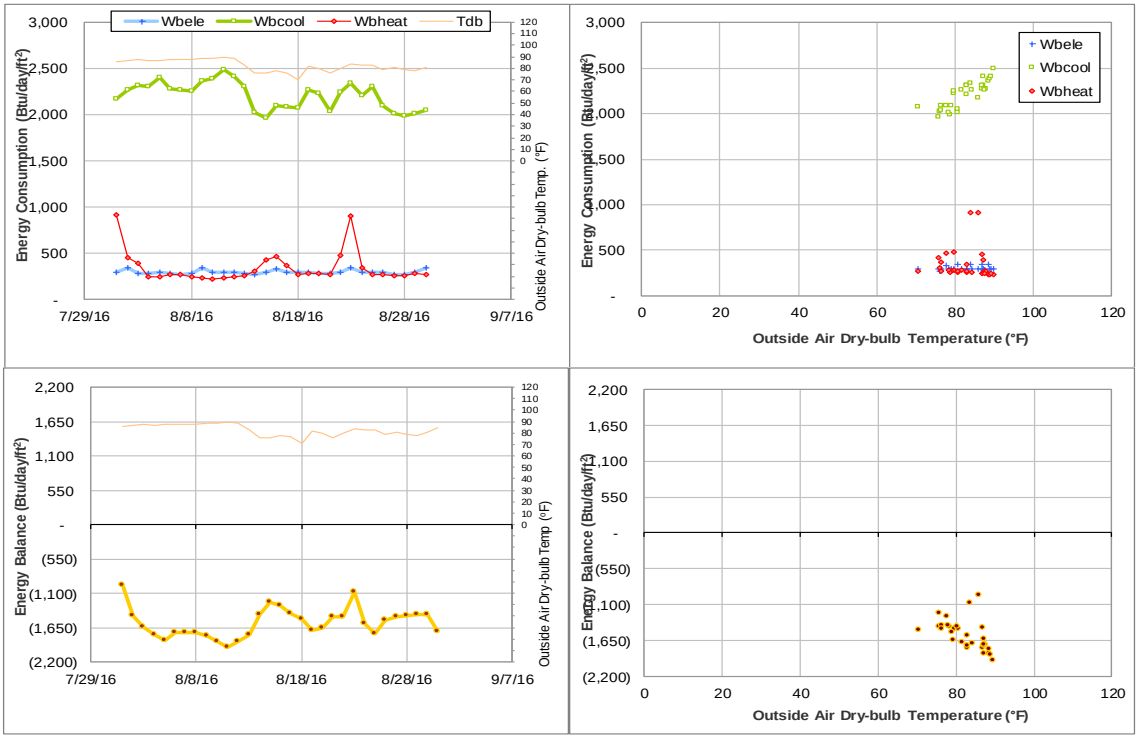


Figure IV-189 Texas Institute for Genomic Medicine TAMU BLDG # 1900 Energy Balance Plot during August 2016

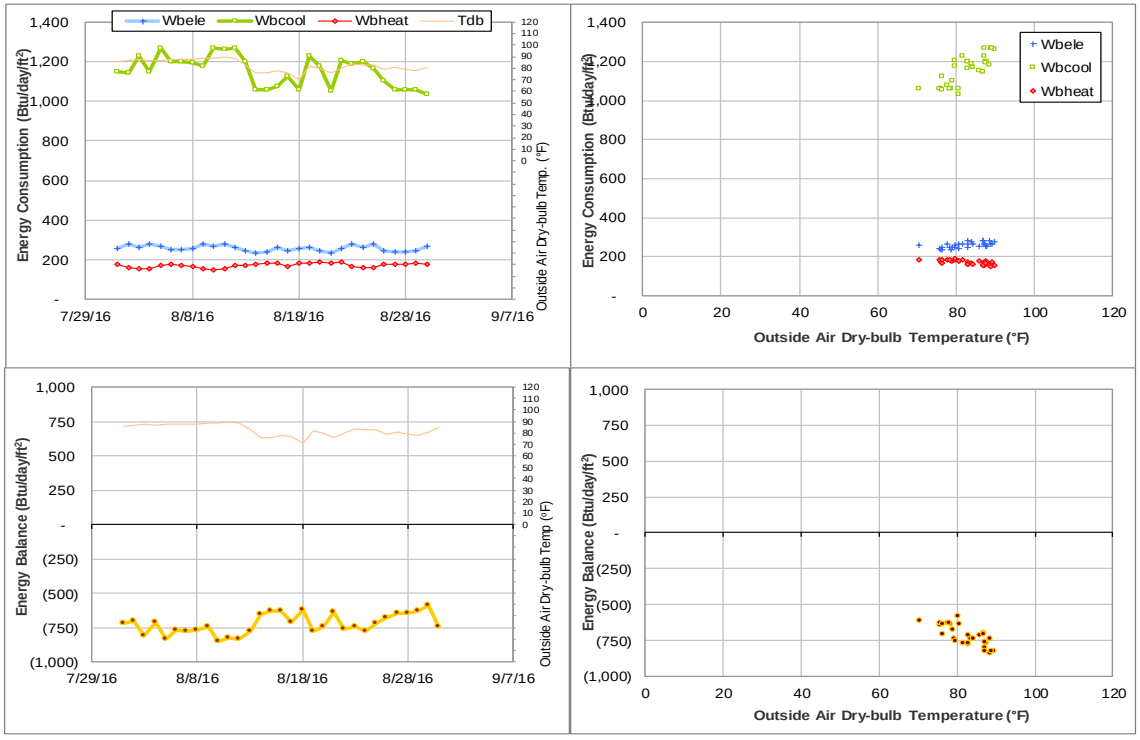


Figure IV-190 Texas A&M Institute for Preclinical Studies A TAMU BLDG # 1904 Energy Balance Plot during August 2016

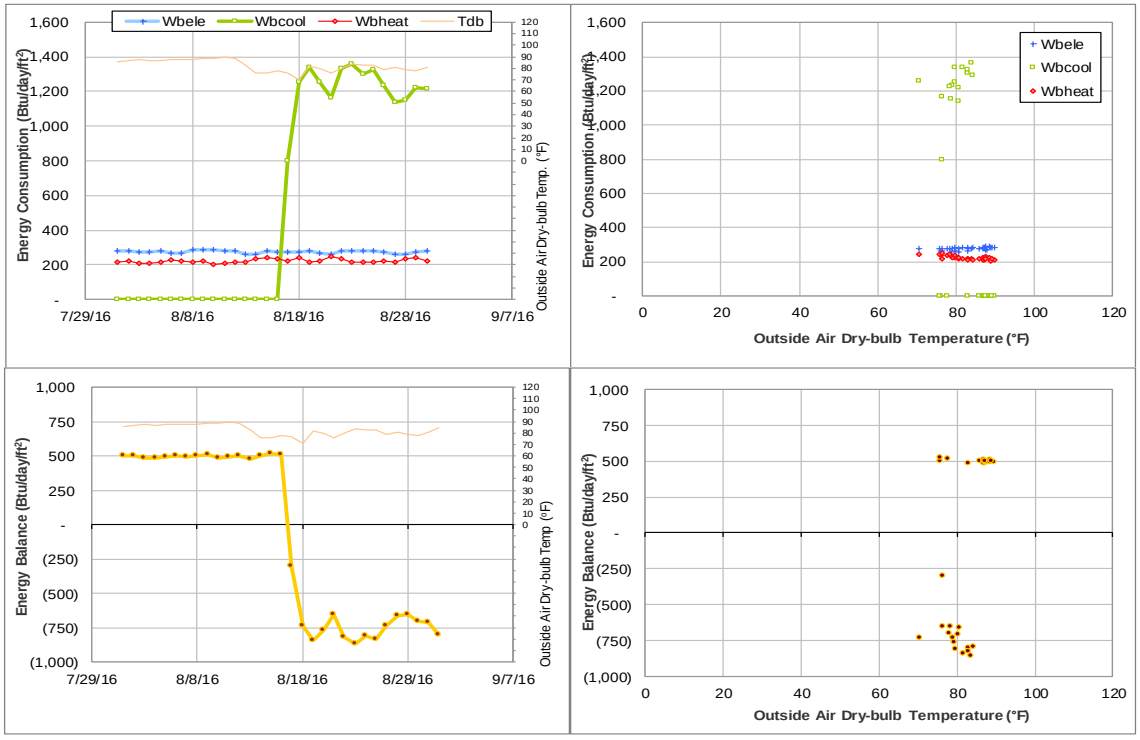


Figure IV-191 National Center for Therapeutics Manufacturing TAMU BLDG # 1910 Energy Balance Plot during August 2016

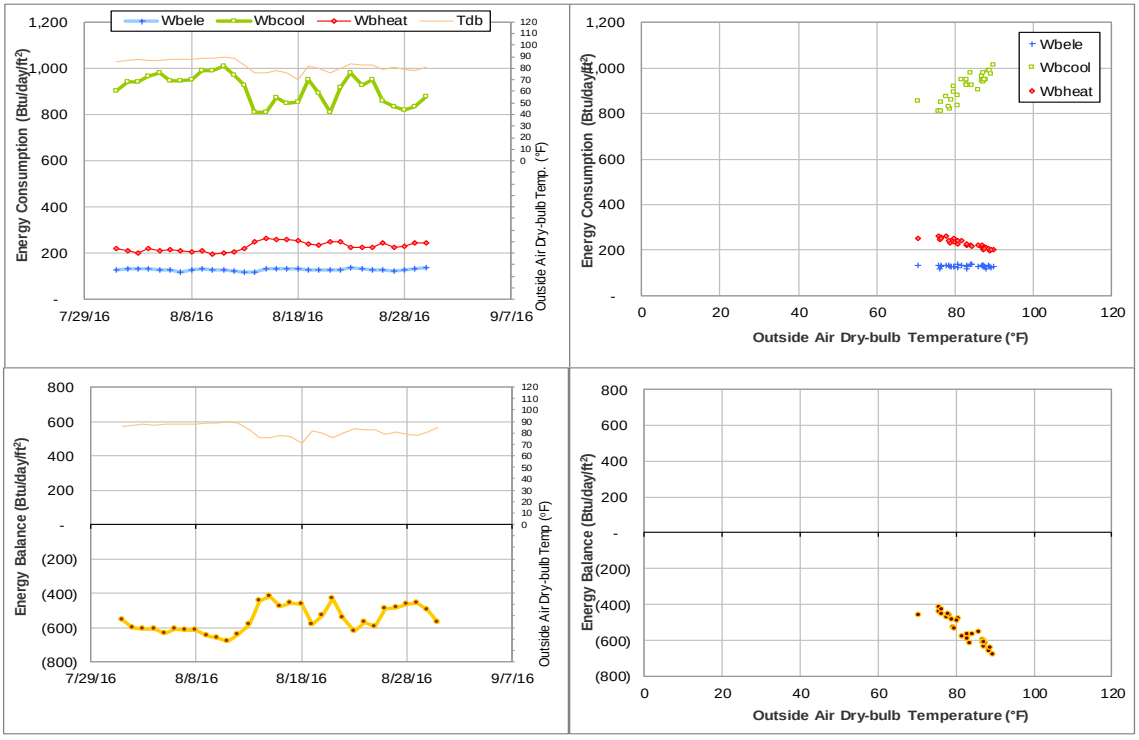


Figure IV-192 Multi-Species Research Building TAMU BLDG # 1911 Energy Balance Plot during August 2016

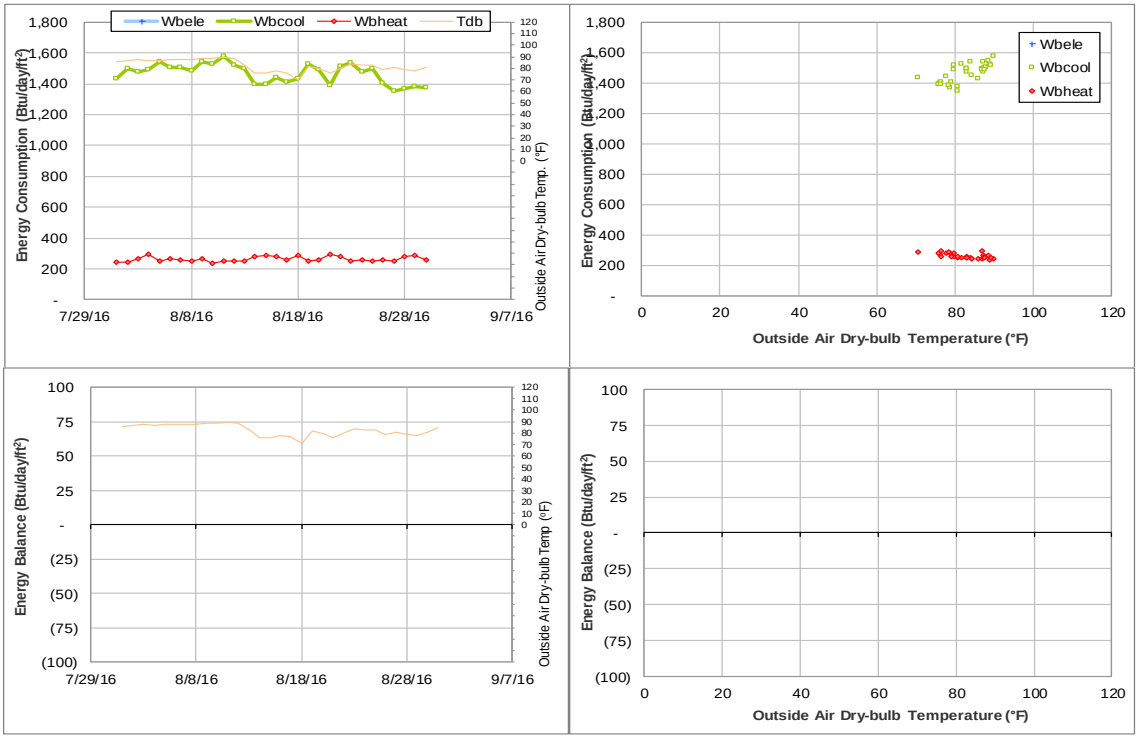


Figure IV-193 NCTM Manufacturing Building TAMU BLDG # 10226 Energy Balance Plot during August 2016

V. Energy Balance Plots with Filled-in data for August 2016 Consumption

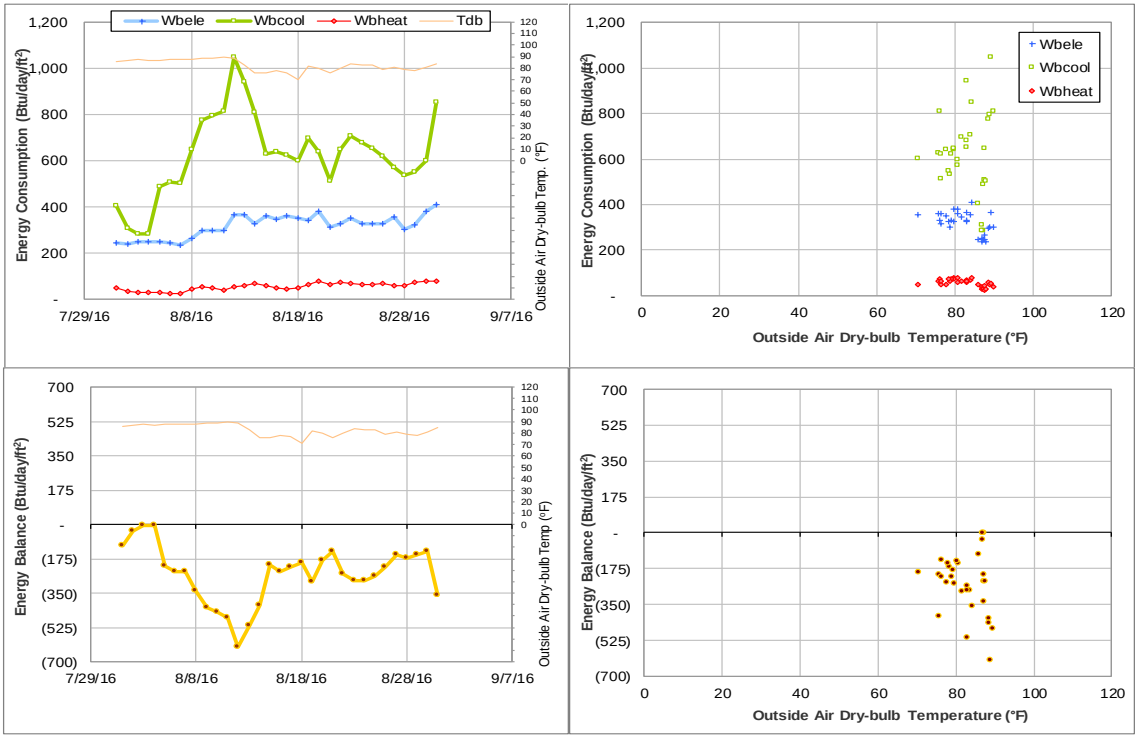


Figure V-1 Kyle Field TAMU BLDG # 367 Energy Balance Plot during August 2016

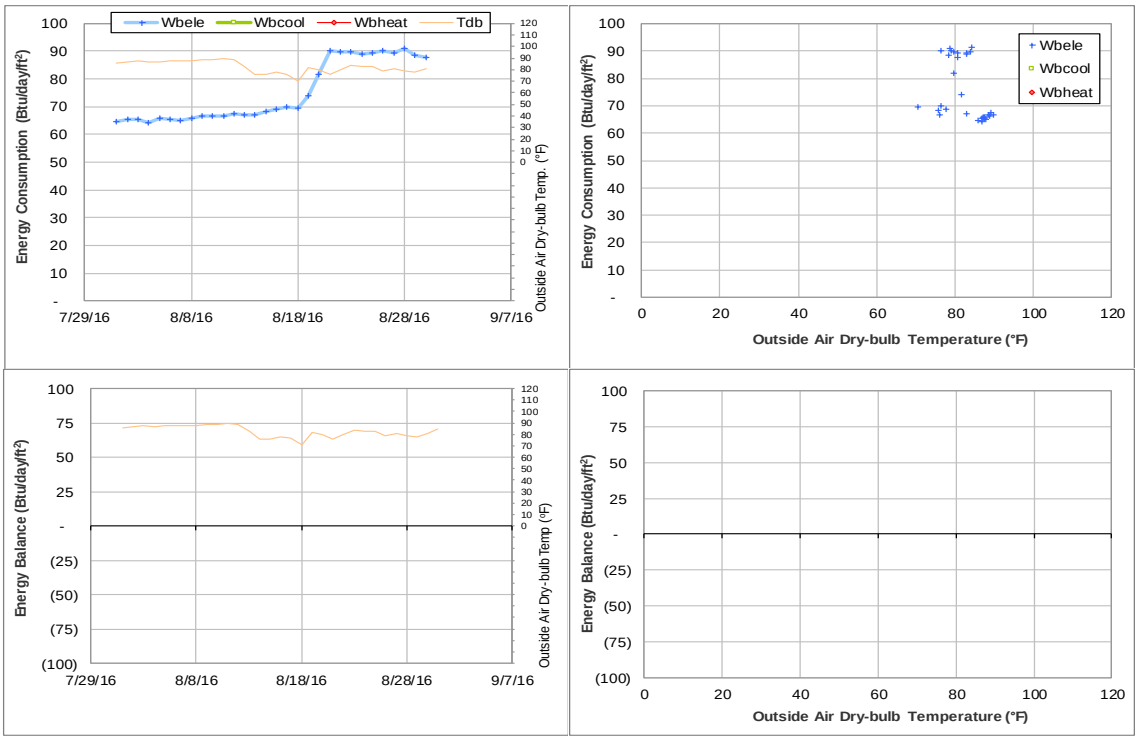


Figure V-2 Underwood Residence Hall TAMU BLDG # 394 Energy Balance Plot during August 2016

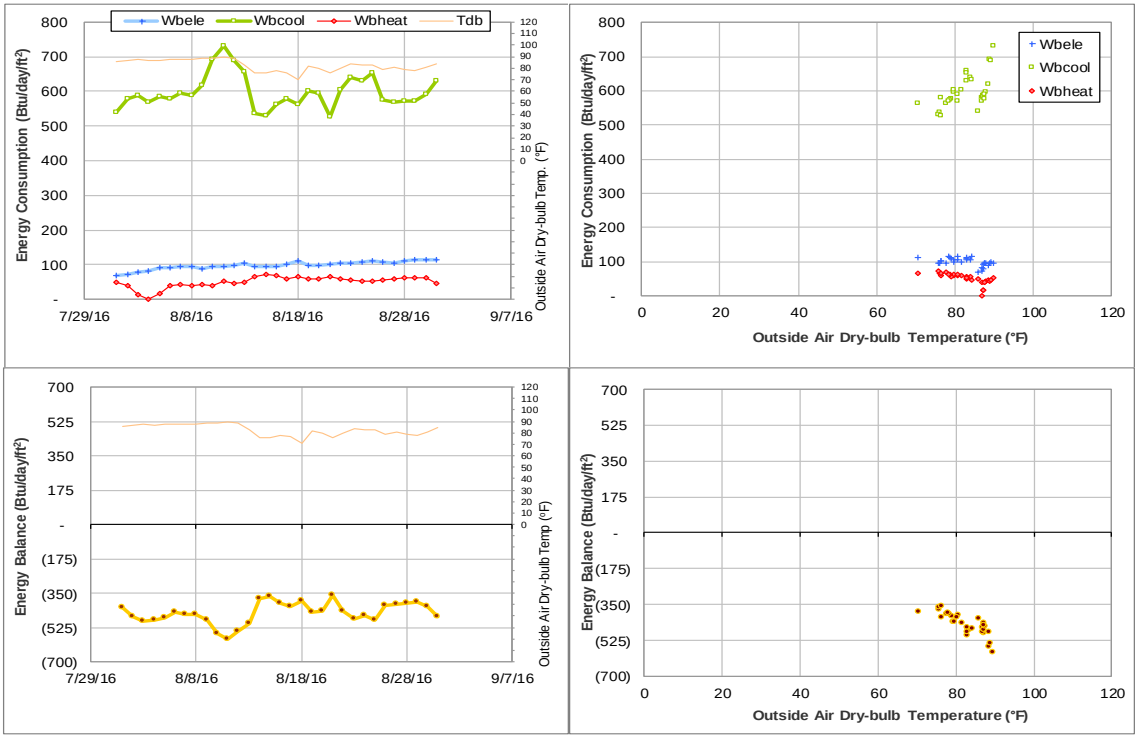


Figure V-3 Briggs Hall Dorm 3 TAMU BLDG # 402 Energy Balance Plot during August 2016

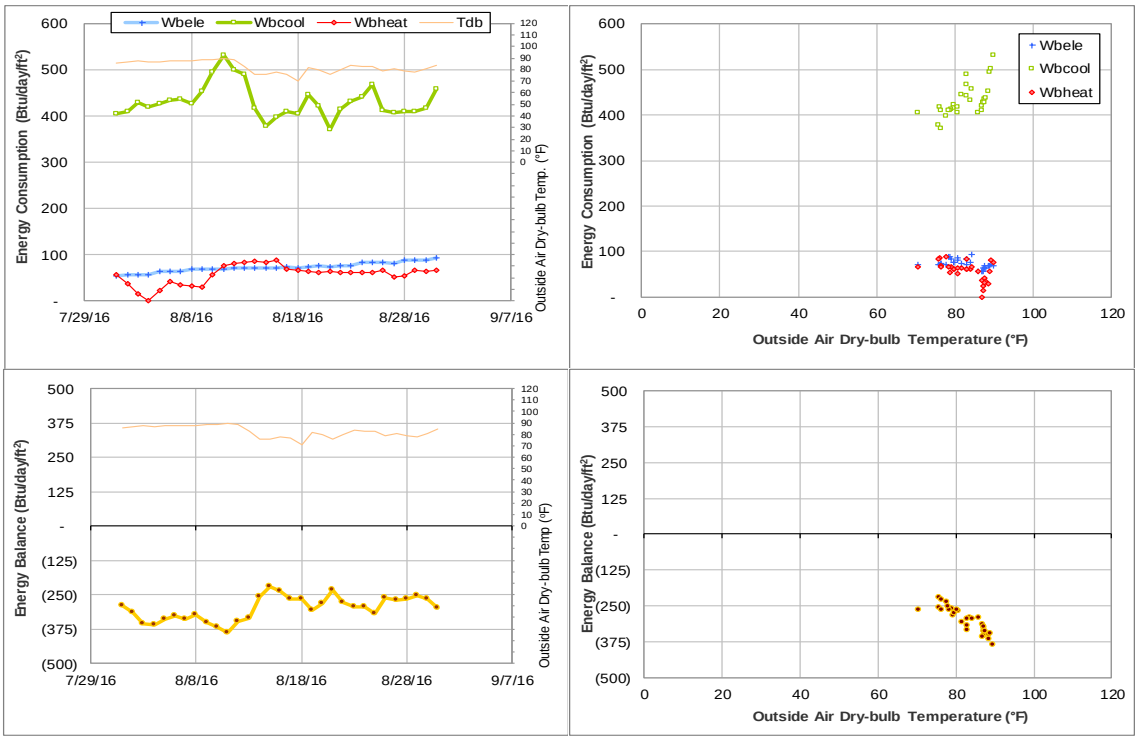


Figure V-4 Fountain Hall Dorm 4 TAMU BLDG # 403 Energy Balance Plot during August 2016

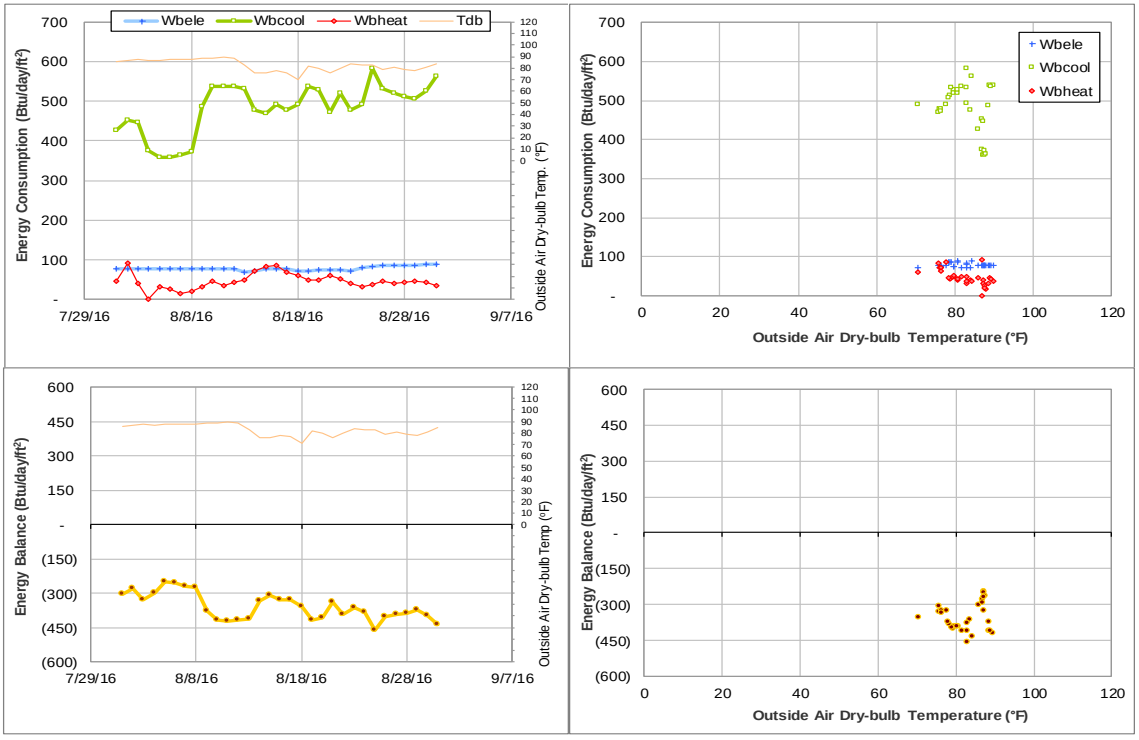


Figure V-5 Gainer Hall Dorm 5 TAMU BLDG # 404 Energy Balance Plot during August 2016

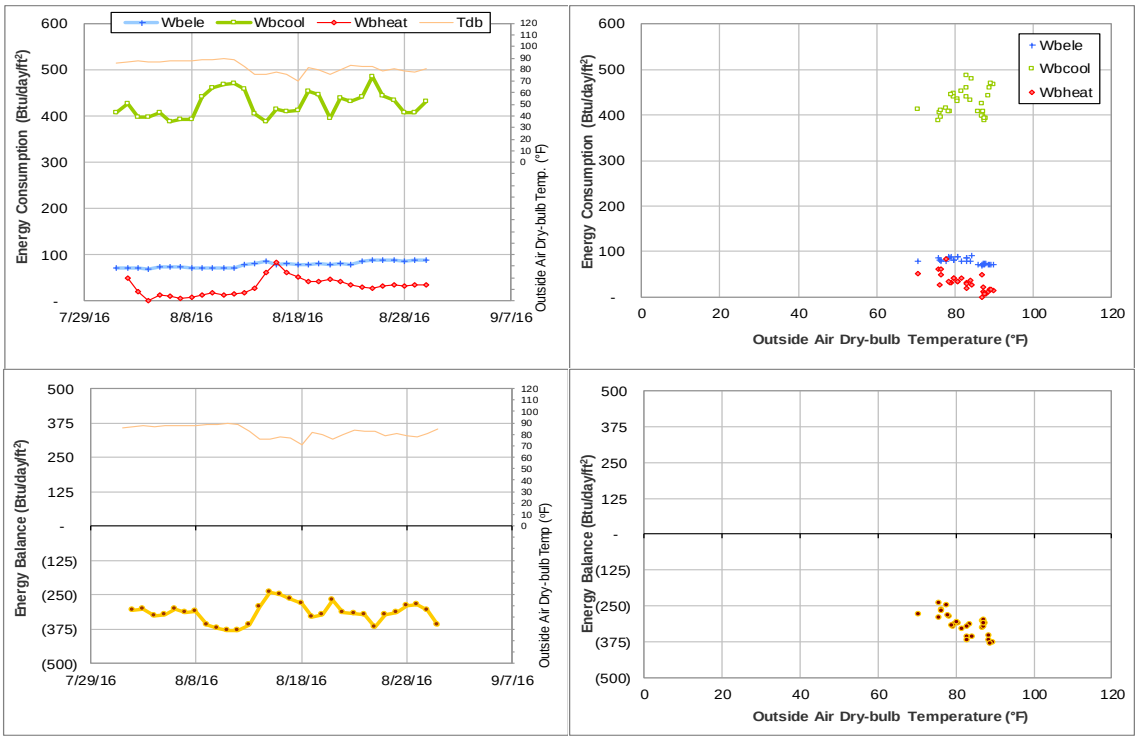


Figure V-6 Gainer Hall, Leonard Hall and Ash LLC TAMU BLDG # 404 Energy Balance Plot during August 2016

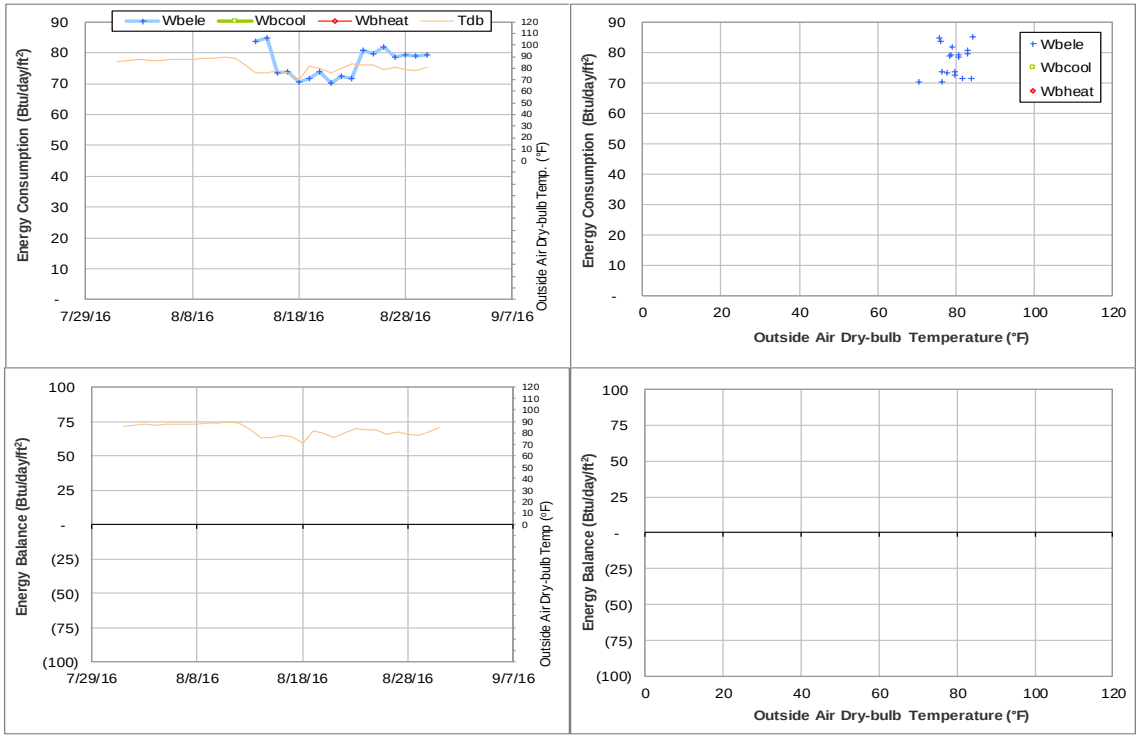


Figure V-7 Leonard Hall - Dorm 7 TAMU BLDG # 406 Energy Balance Plot during August 2016

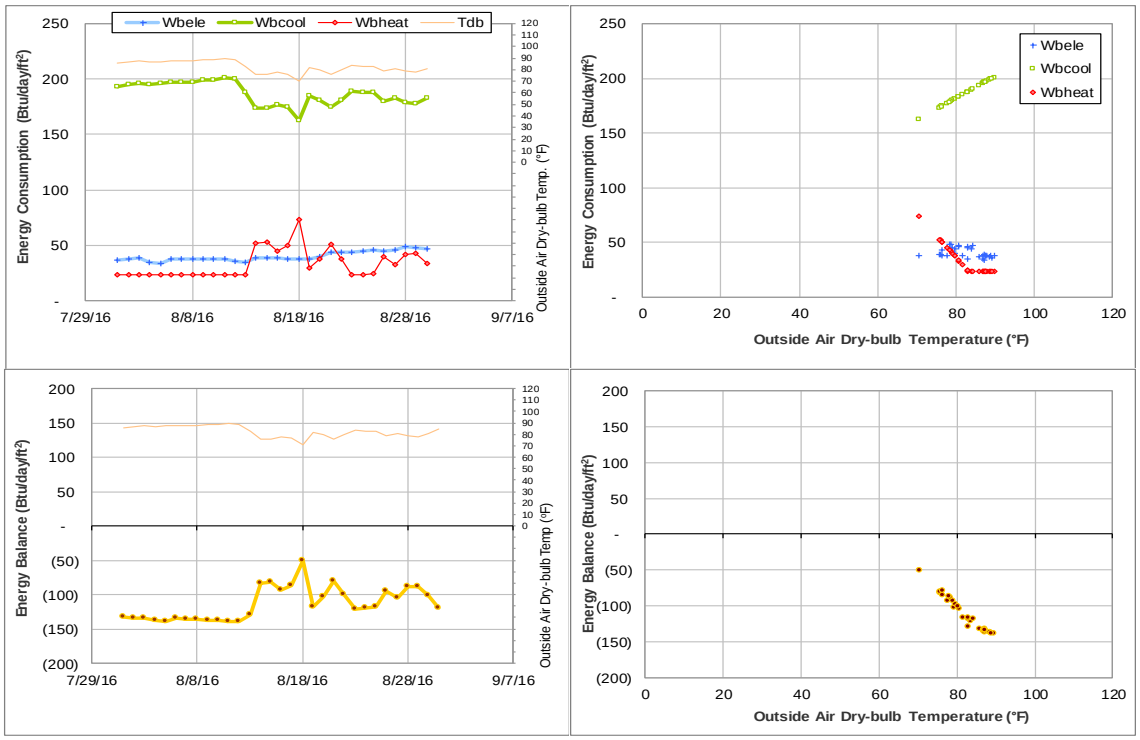


Figure V-8 Legett Residence Hall TAMU BLDG # 419 Energy Balance Plot during August 2016

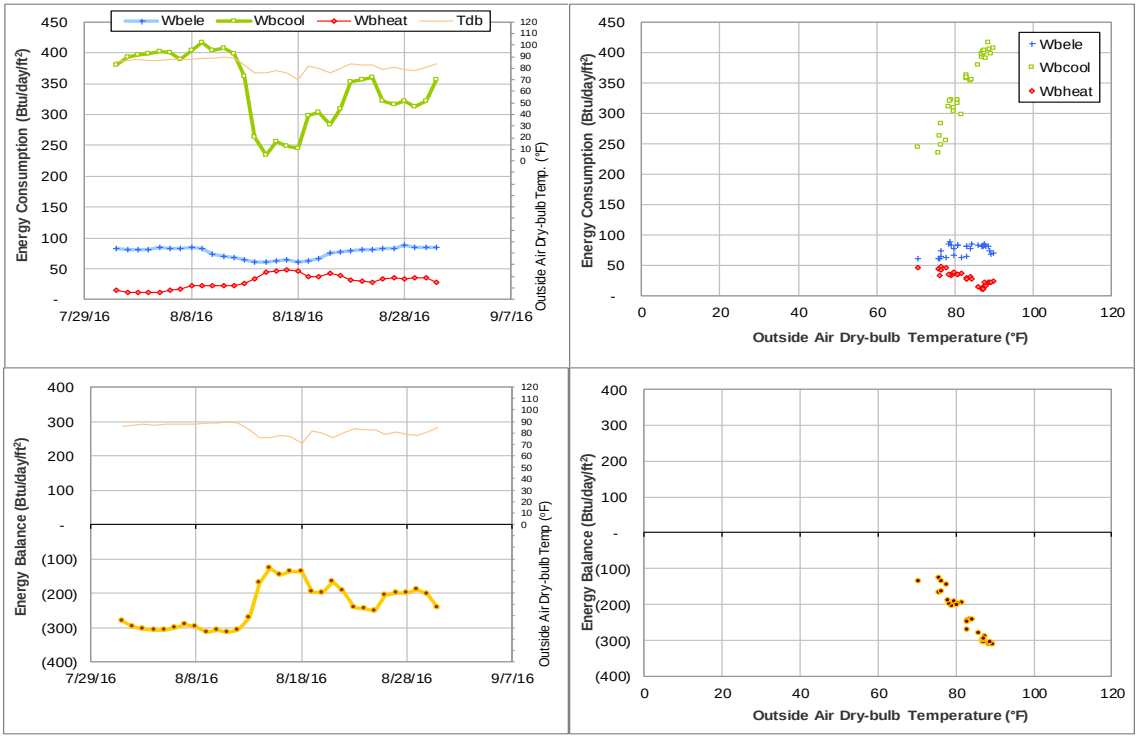


Figure V-9 FHK Complex TAMU BLDG # 426 Energy Balance Plot during August 2016

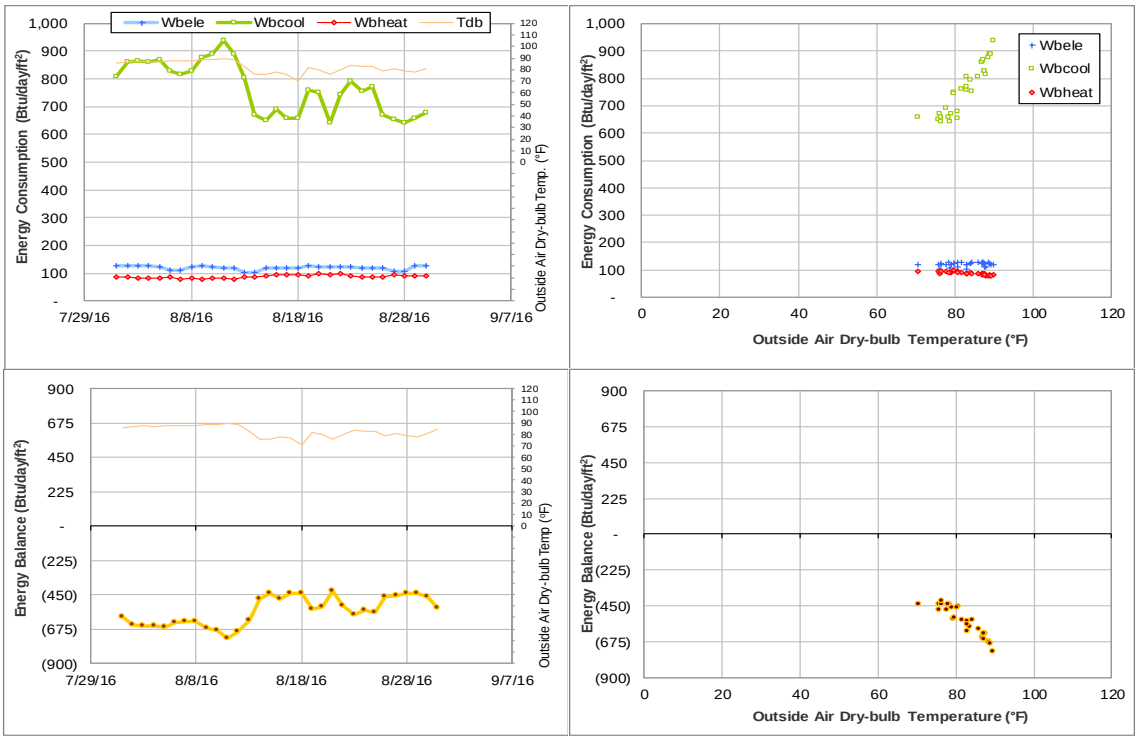


Figure V-10 Reed-McDonald and Engineering Innovation Center TAMU BLDG # 436 Energy Balance Plot during August 2016

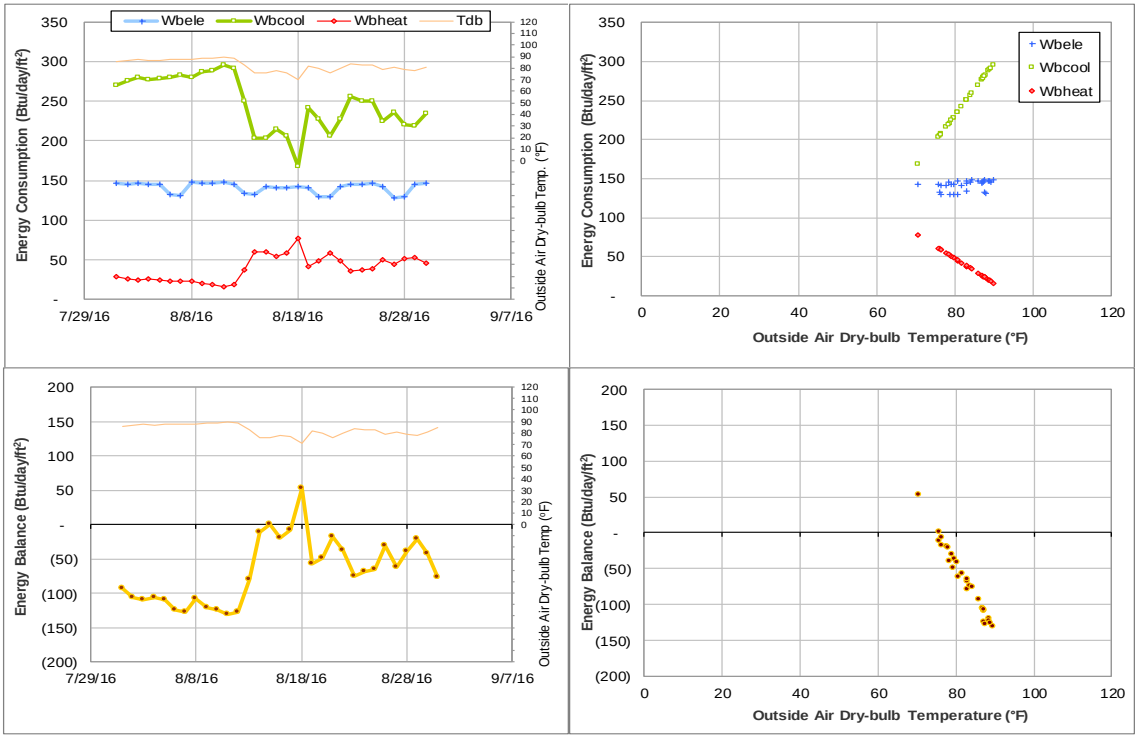


Figure V-11 Oceanography & Meteorology Building TAMU BLDG # 443 Energy Balance Plot during August 2016

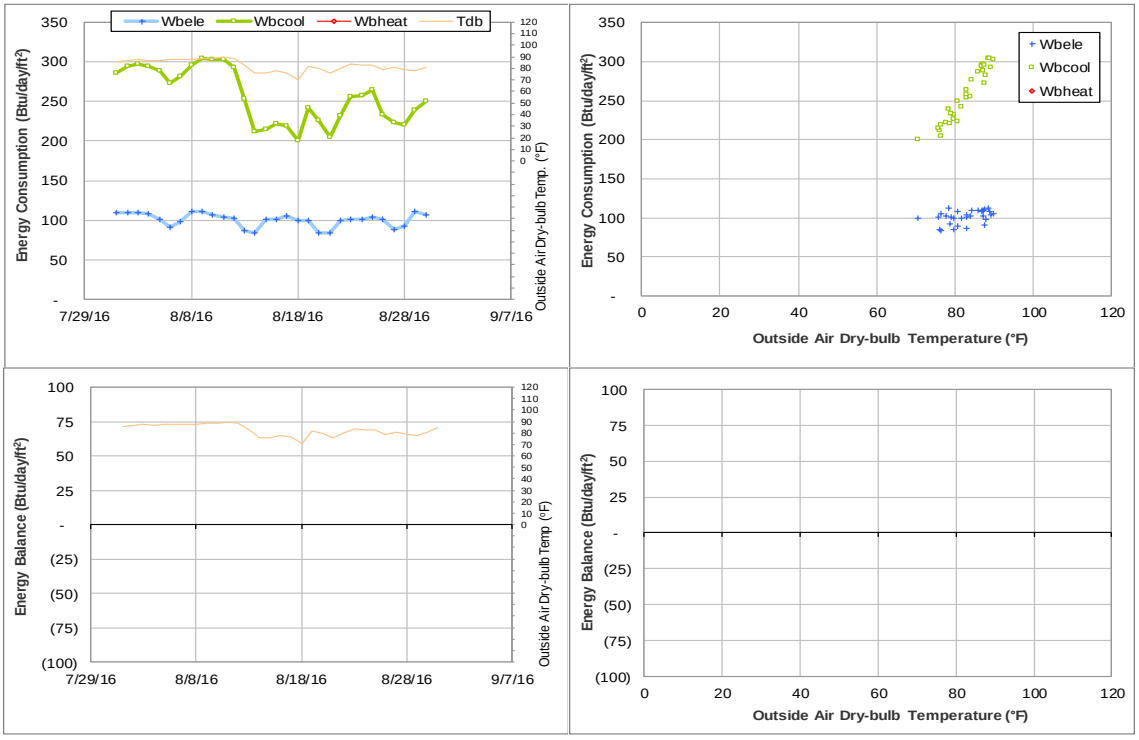


Figure V-12 Evans Library TAMU BLDG # 468 Energy Balance Plot during August 2016

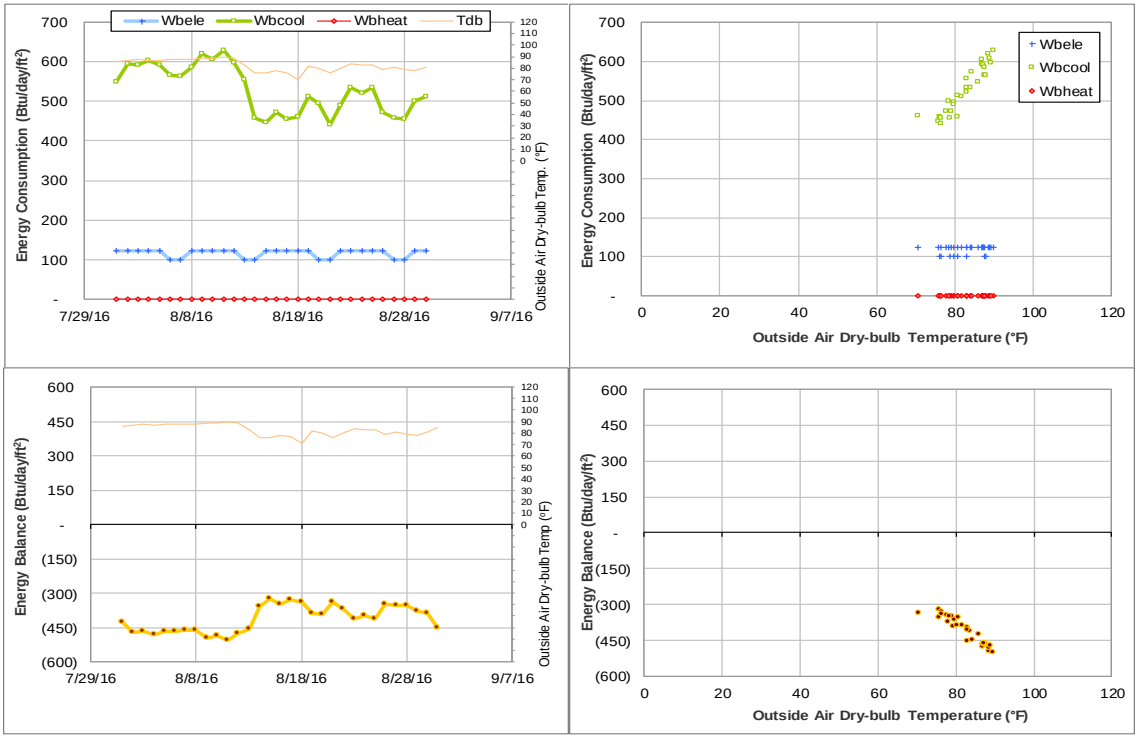


Figure V-13 Francis Hall TAMU BLDG # 476 Energy Balance Plot during August 2016

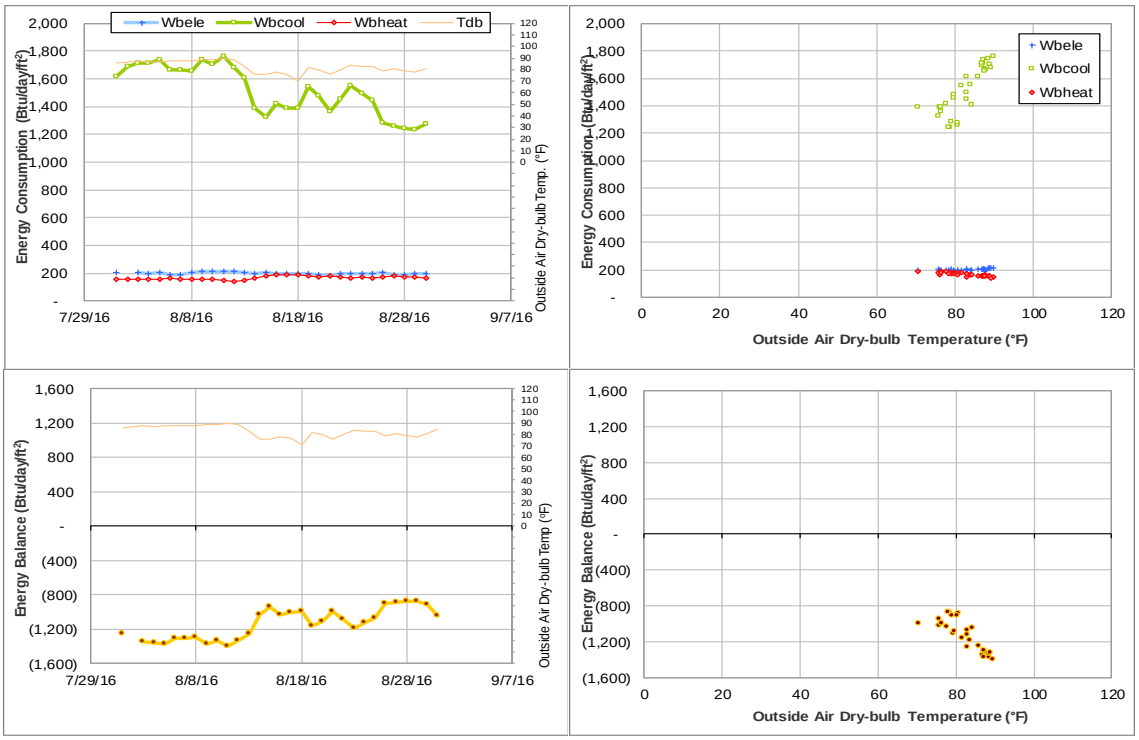


Figure V-14 Fermier Hall TAMU BLDG # 482 Energy Balance Plot during August 2016

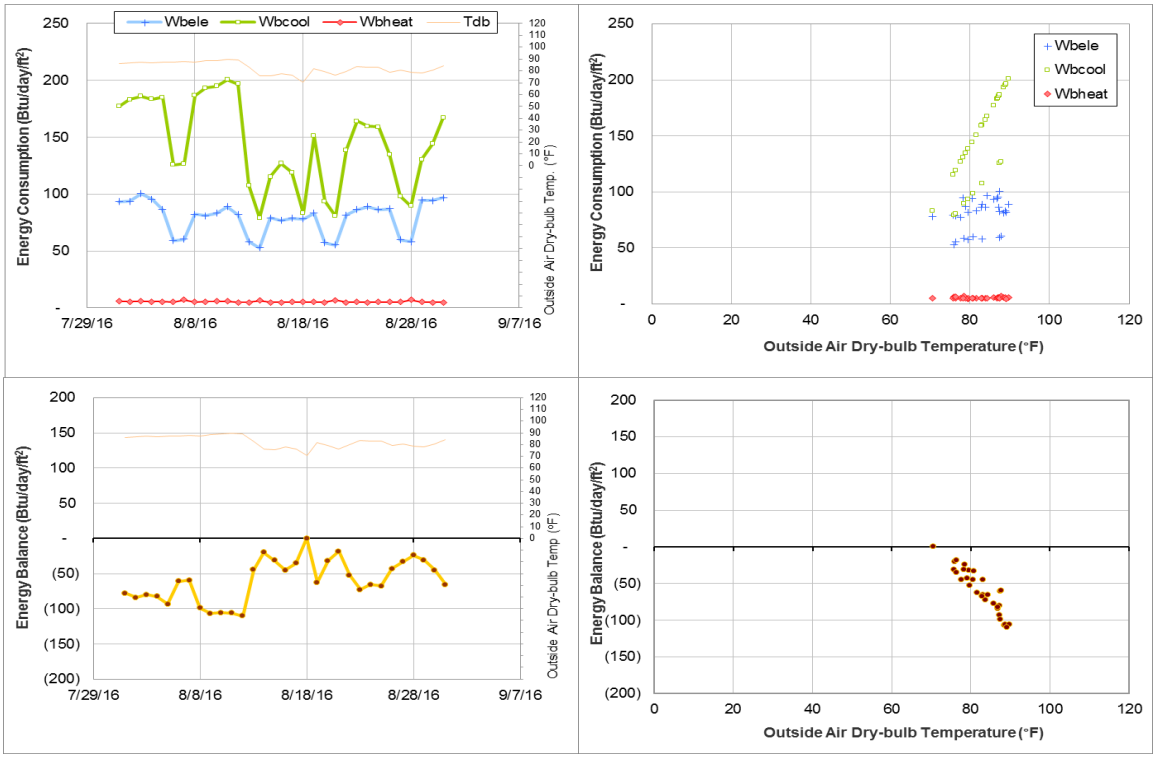


Figure V-15 Thompson Hall TAMU BLDG # 483 Energy Balance Plot during August 2016

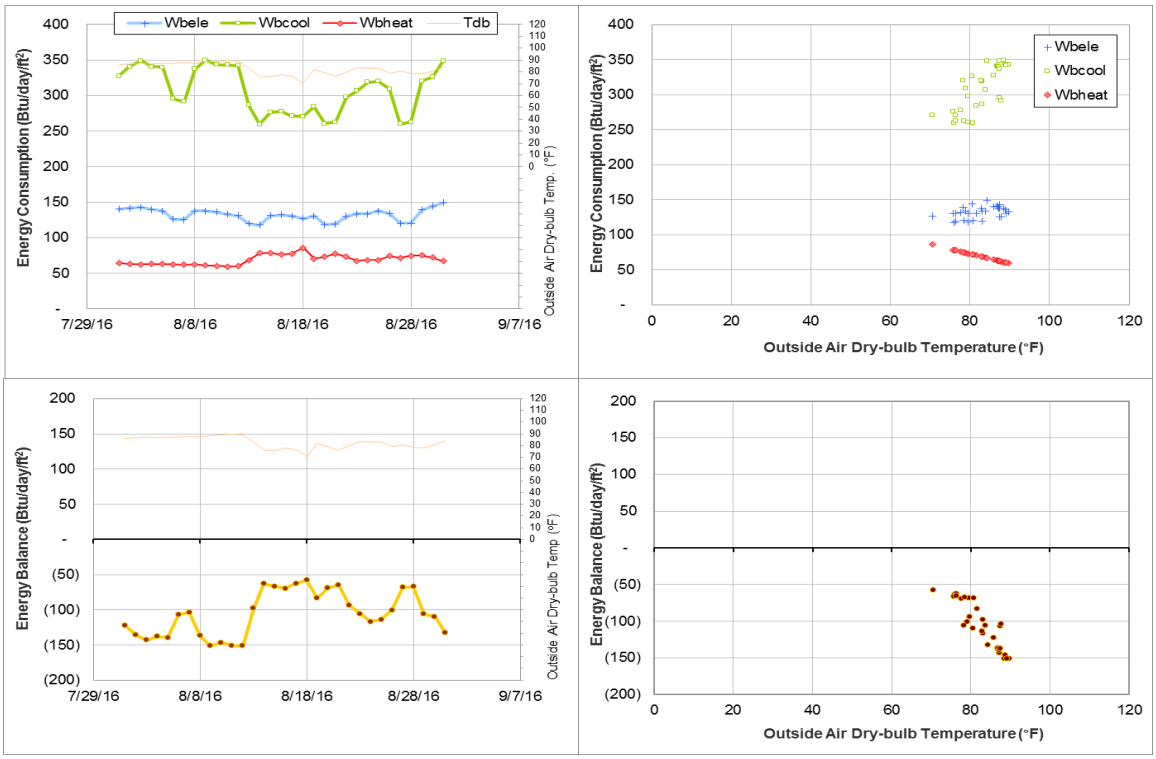


Figure V-16 Civil Engineering Building TAMU BLDG # 492 Energy Balance Plot during August 2016

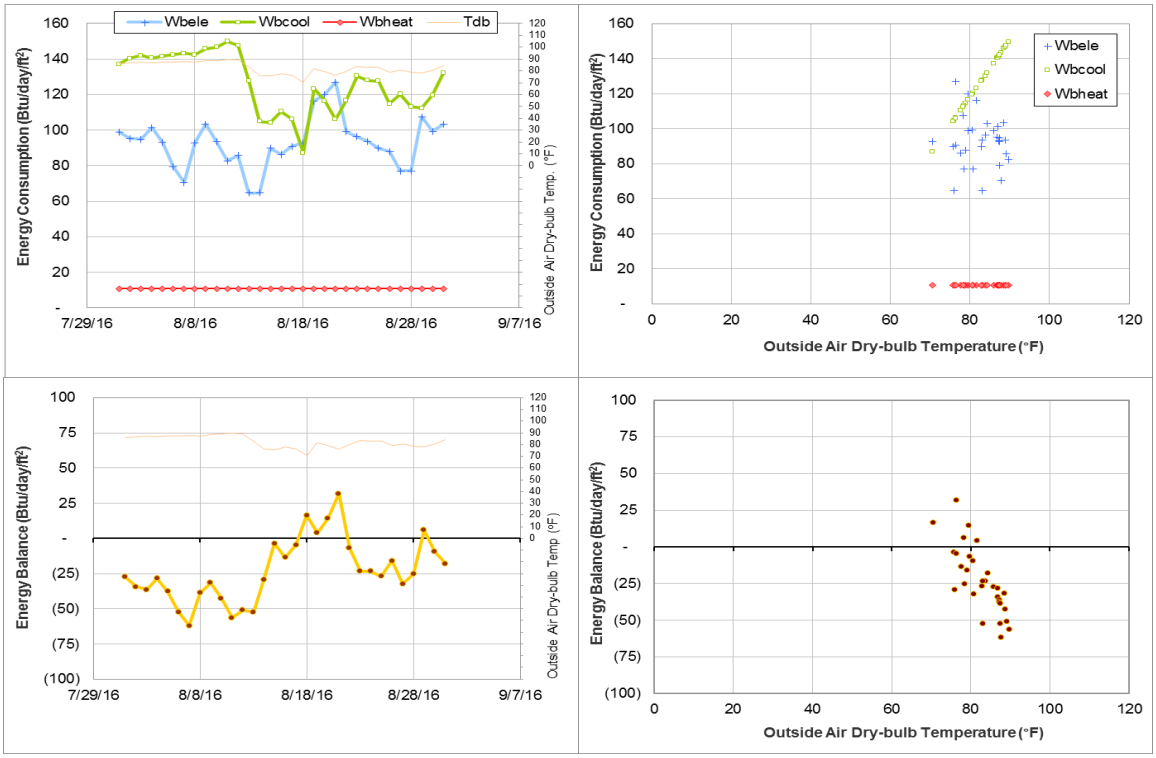


Figure V-17 Engineering Innovation Center TAMU BLDG # 499 Energy Balance Plot during August 2016

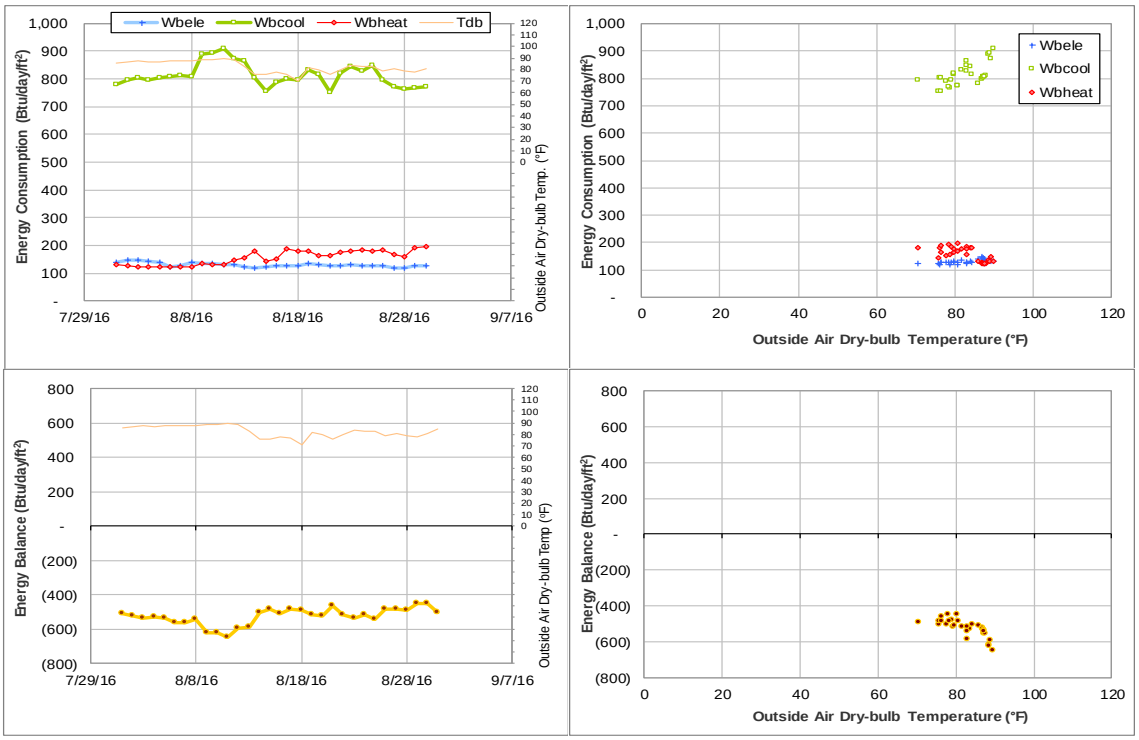


Figure V-18 Veterinary Medical Science Building TAMU BLDG # 507 Energy Balance Plot during August 2016

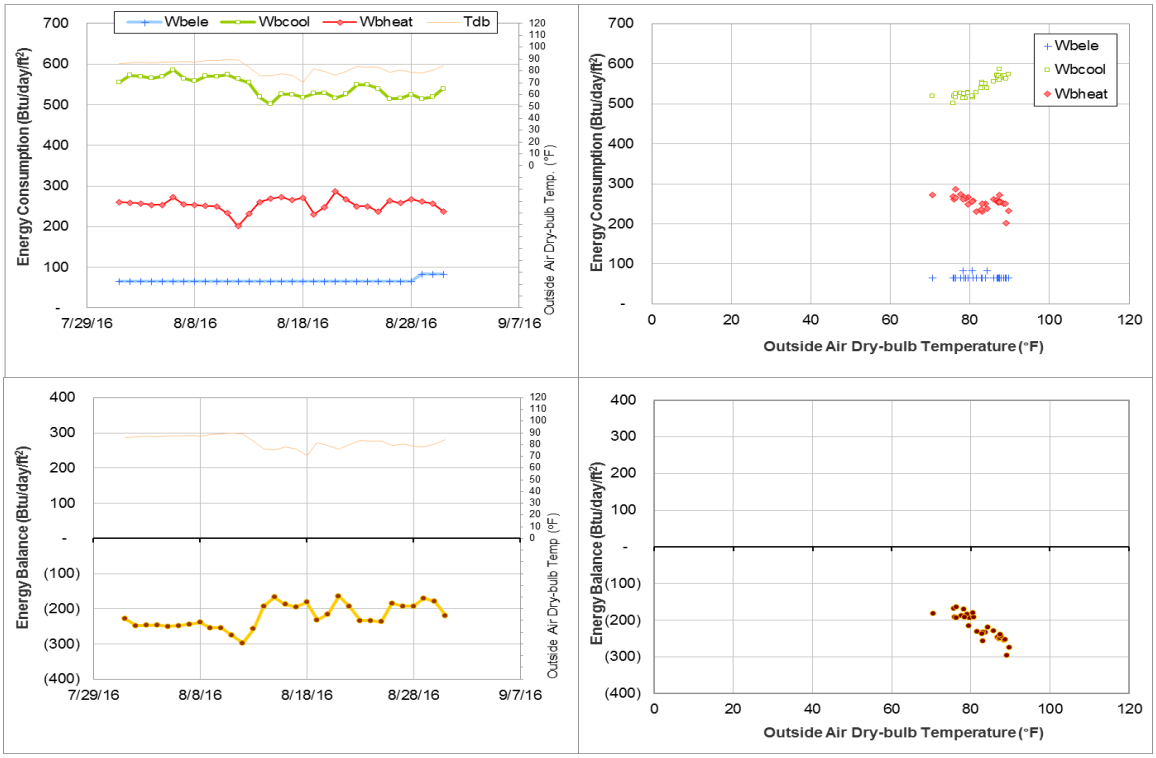


Figure V-19 Haas Residence Hall TAMU BLDG # 549 Energy Balance Plot during August 2016

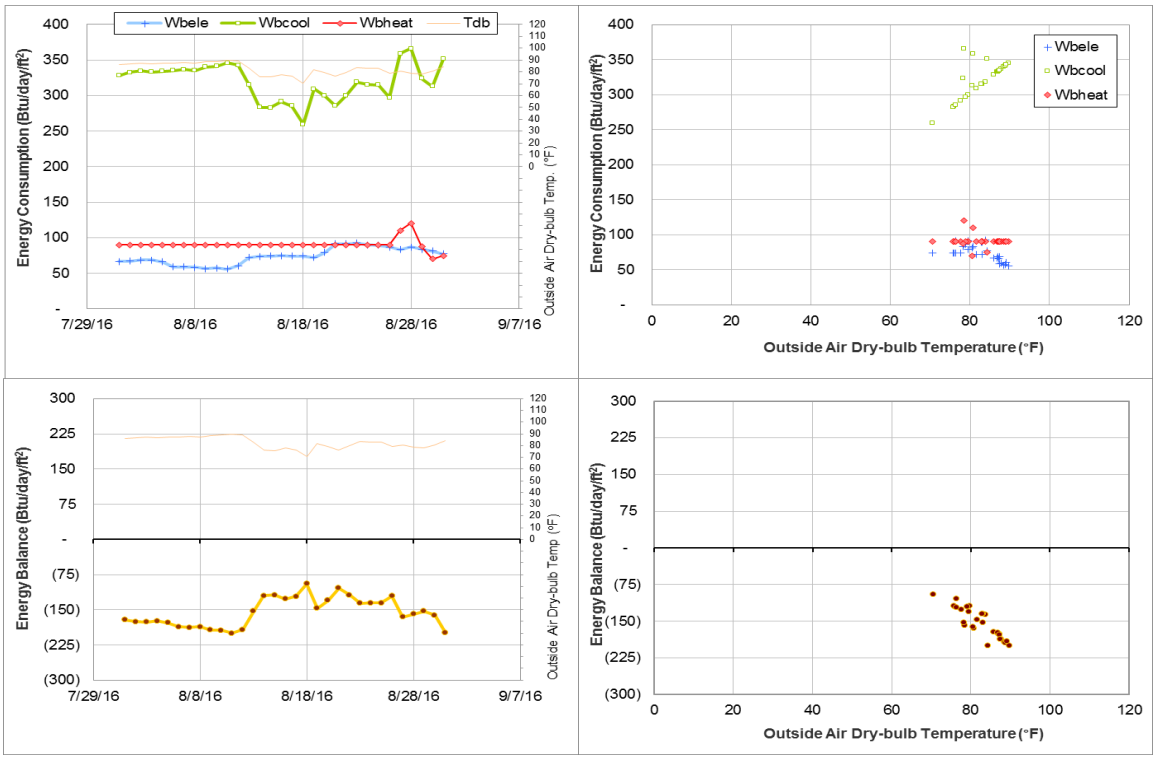


Figure V-20 Neeley Residence Hall TAMU BLDG # 652 Energy Balance Plot during August 2016

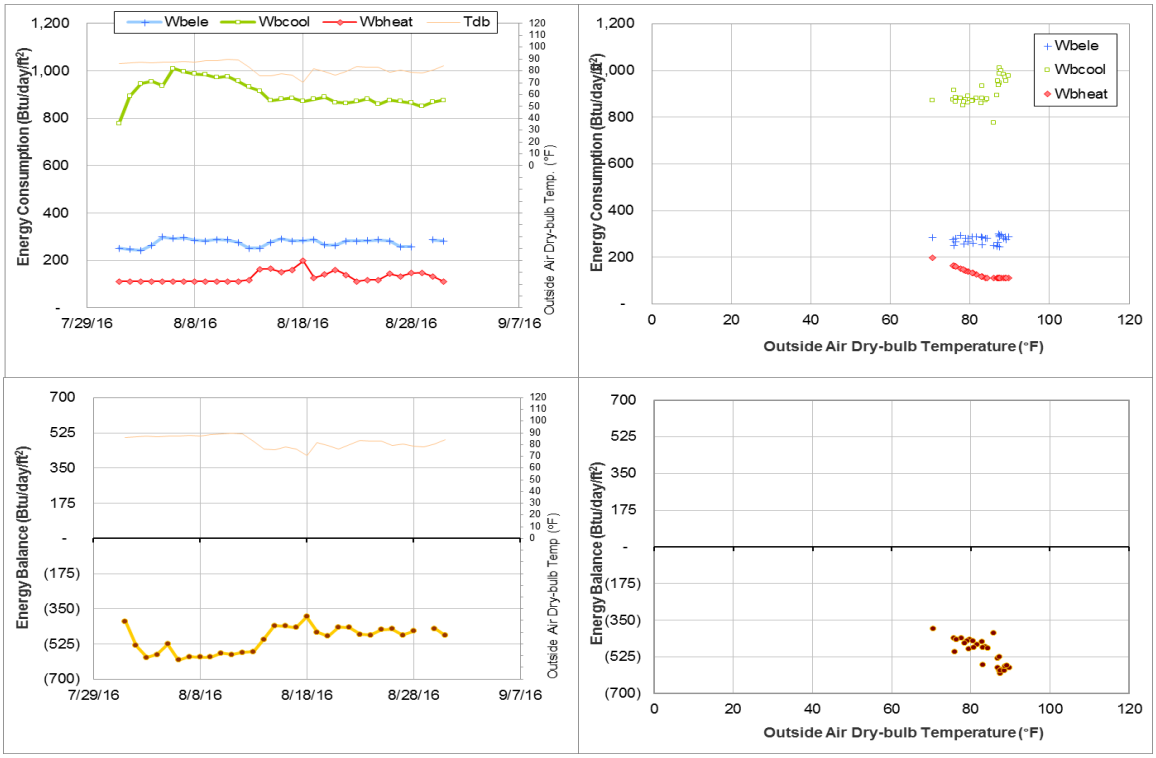


Figure V-21 McNew Laboratory TAMU BLDG # 740 Energy Balance Plot during August 2016

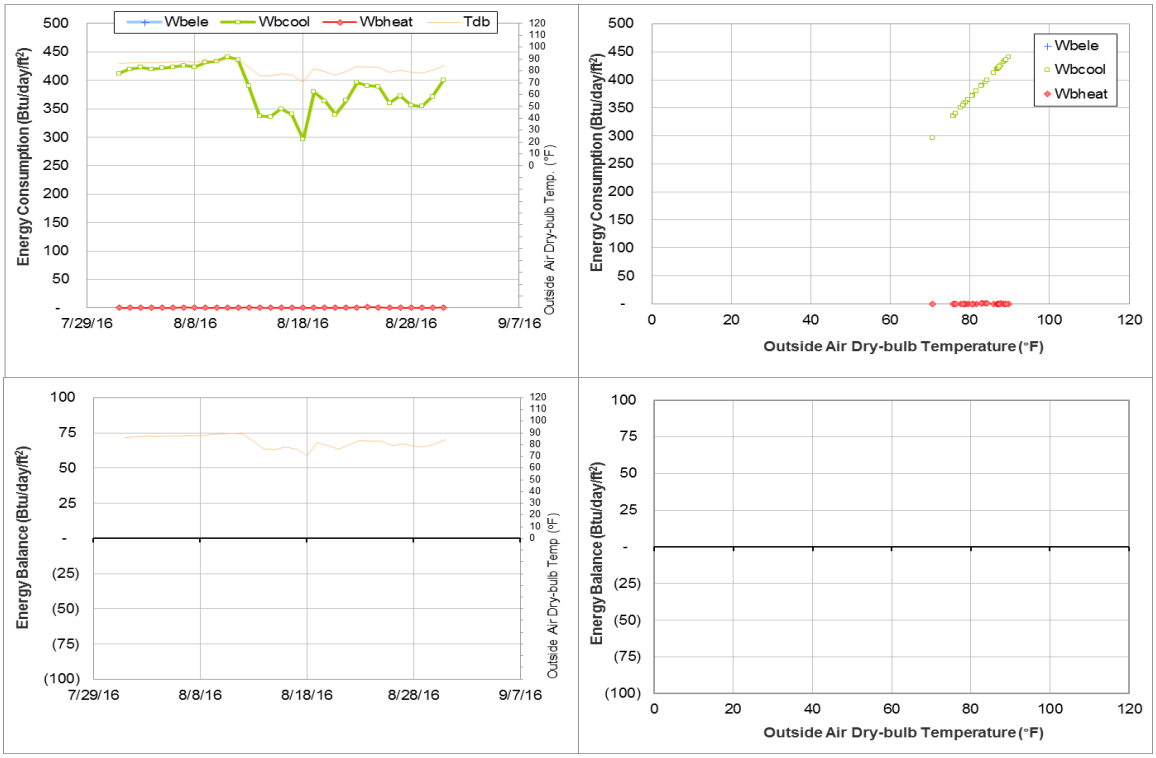


Figure V-22 TVMC-Small Animal Building TAMU BLDG # 880 Energy Balance Plot during August 2016

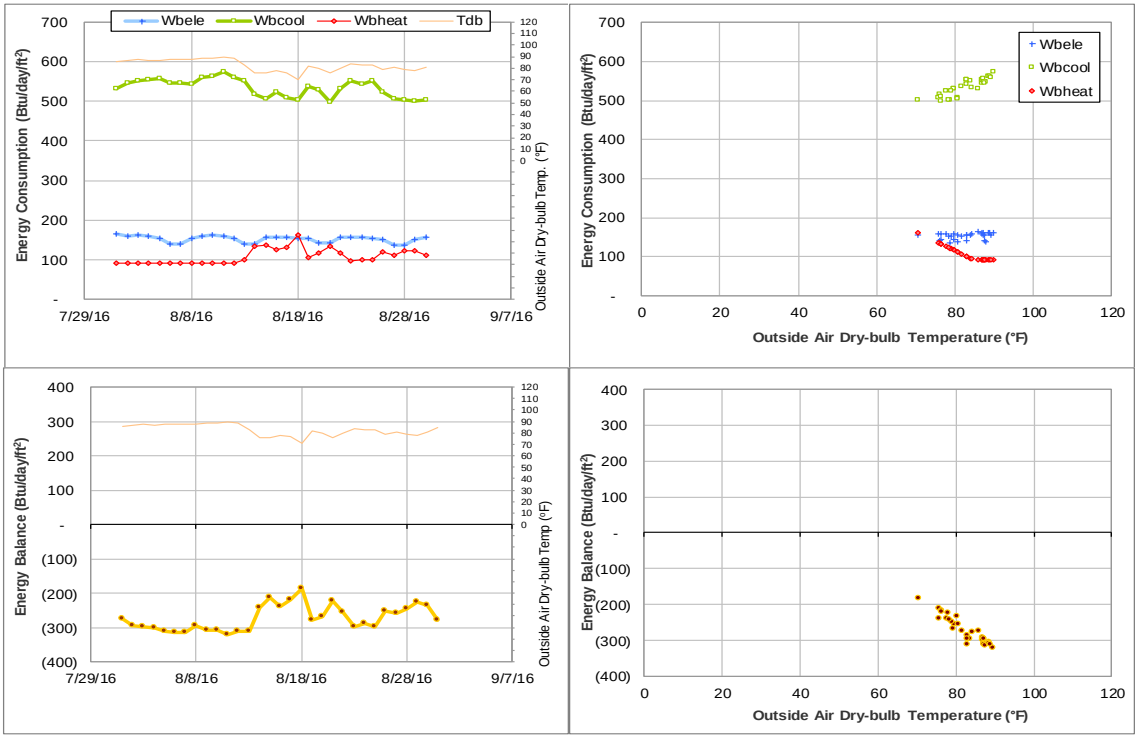


Figure V-23 Veterinary Medicine Administration TAMU BLDG # 1026 Energy Balance Plot during August 2016

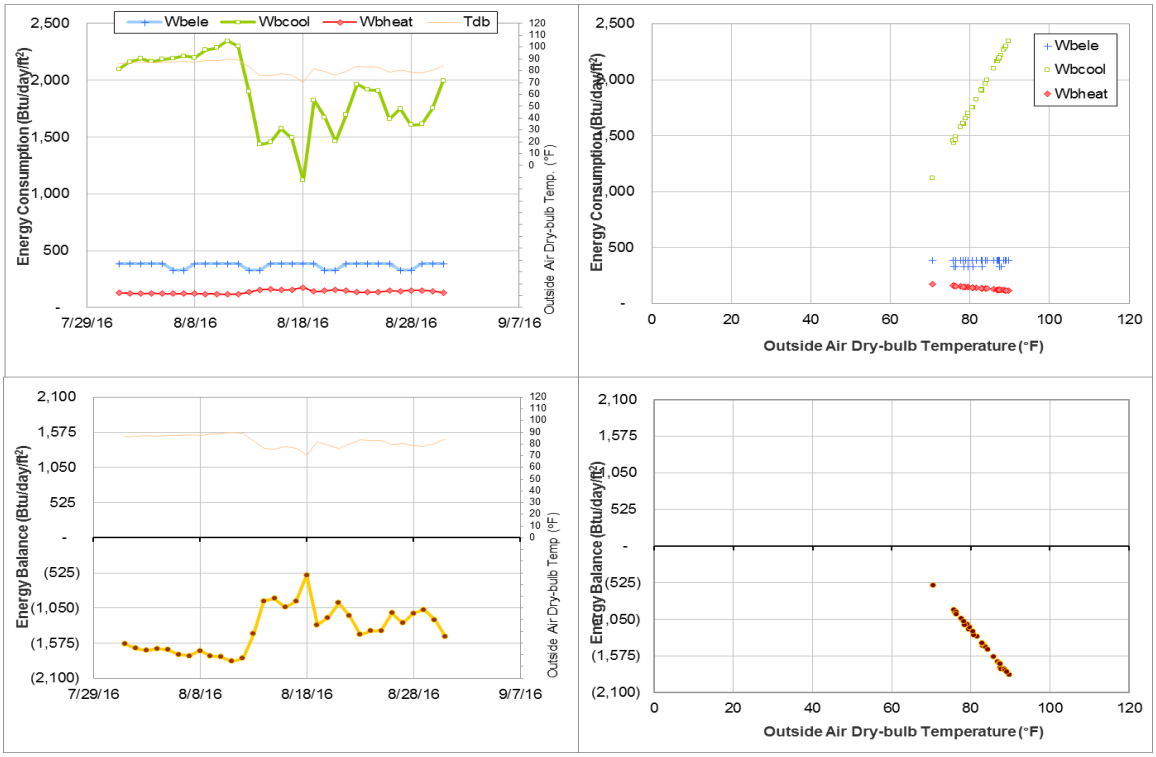


Figure V-24 Texas Vet Med Diagnostic Lab TAMU BLDG # 1041 Energy Balance Plot during August 2016

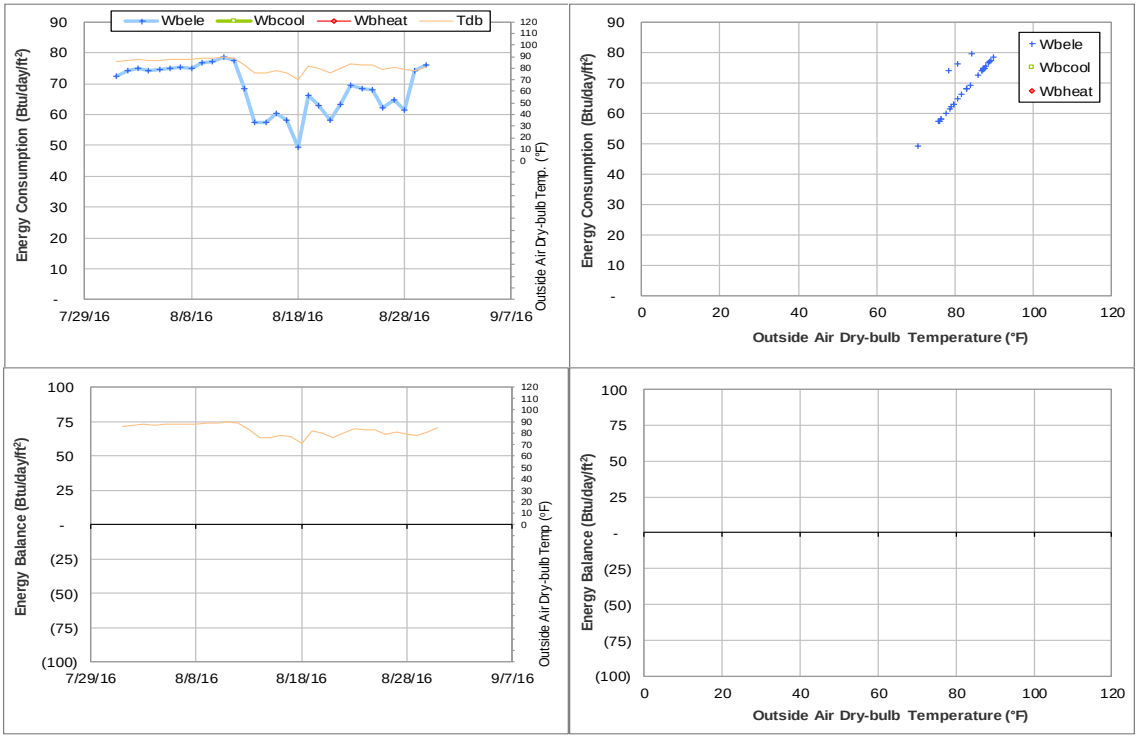


Figure V-25 University Apartments - The Gardens F TAMU BLDG # 1454 Energy Balance Plot during August 2016

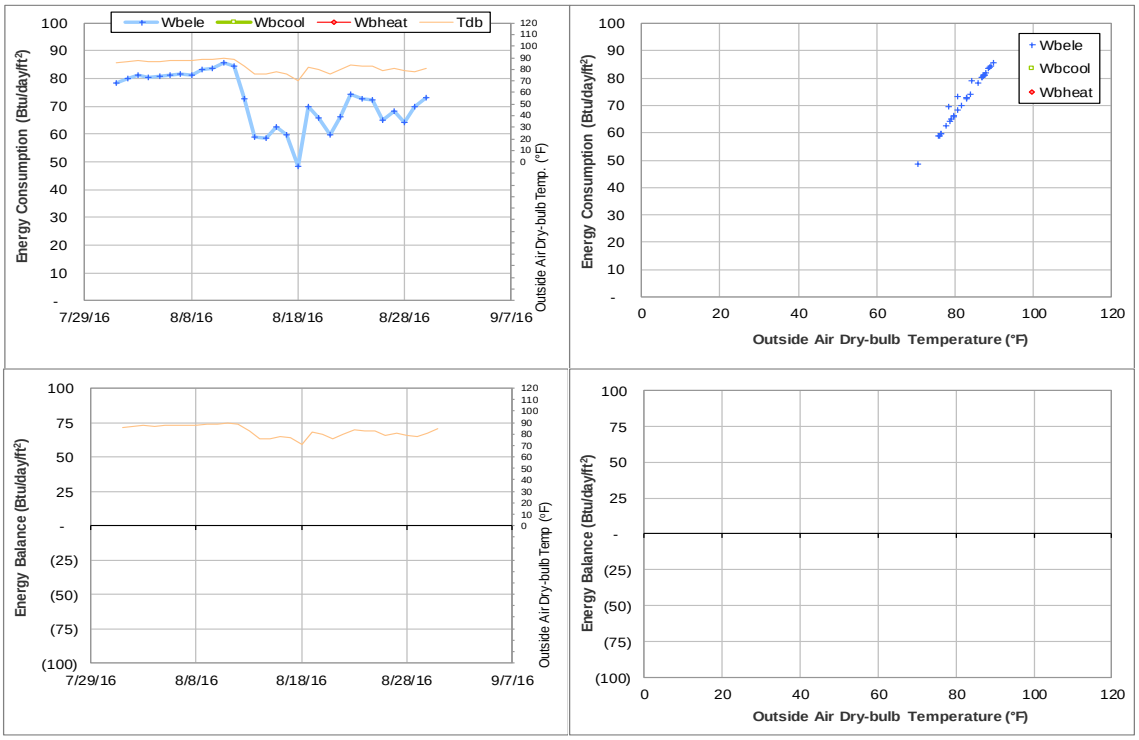


Figure V-26 University Apartments - The Gardens G TAMU BLDG # 1455 Energy Balance Plot during August 2016

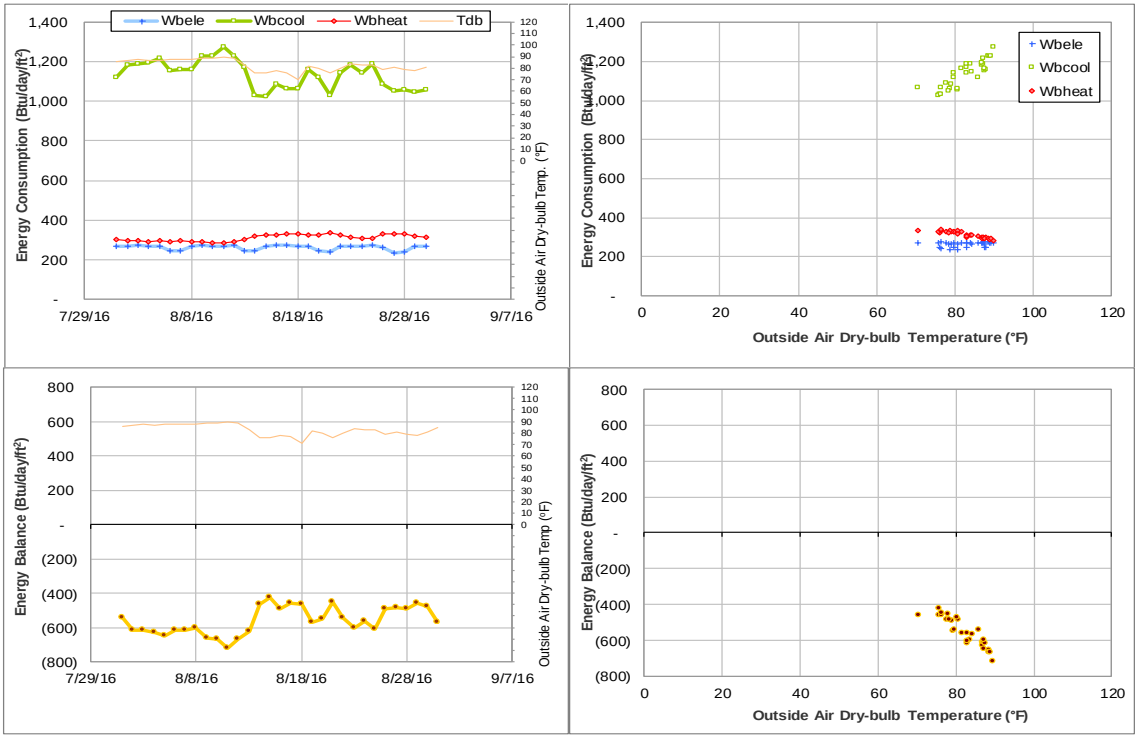


Figure V-27 Nuclear Magnetic Resonance Facility TAMU BLDG # 1525 Energy Balance Plot during August 2016

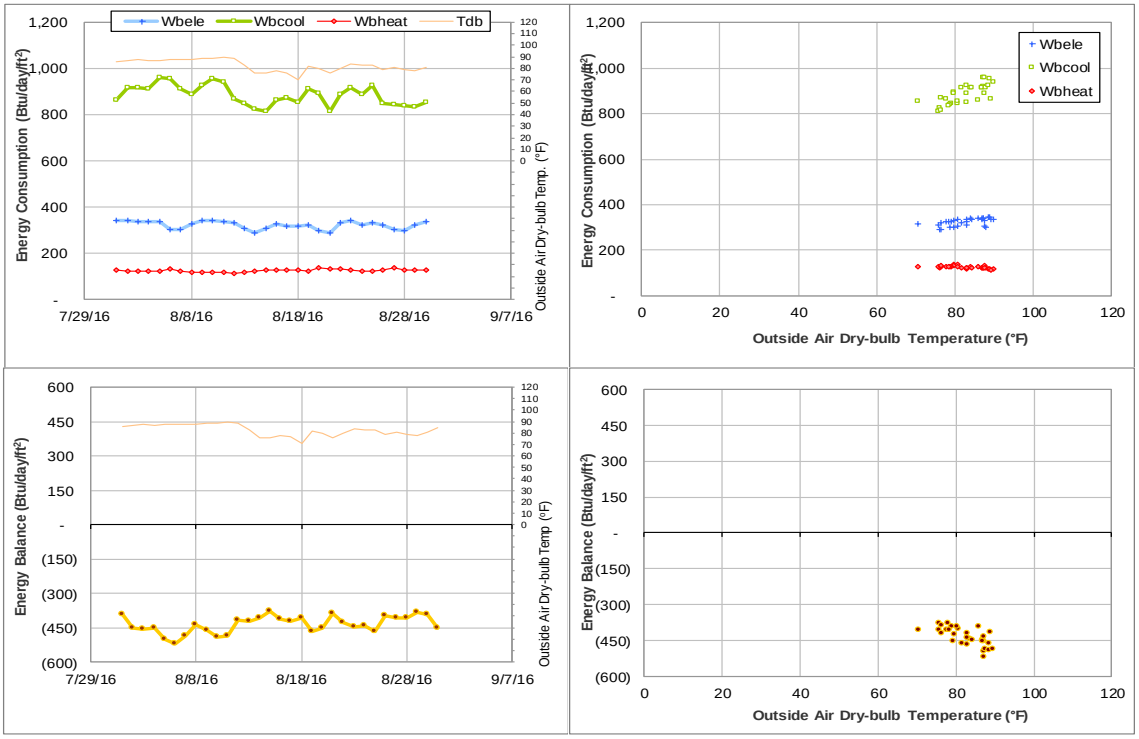


Figure V-28 Interdisciplinary Life Sciences Building TAMU BLDG # 1530 Energy Balance Plot during August 2016

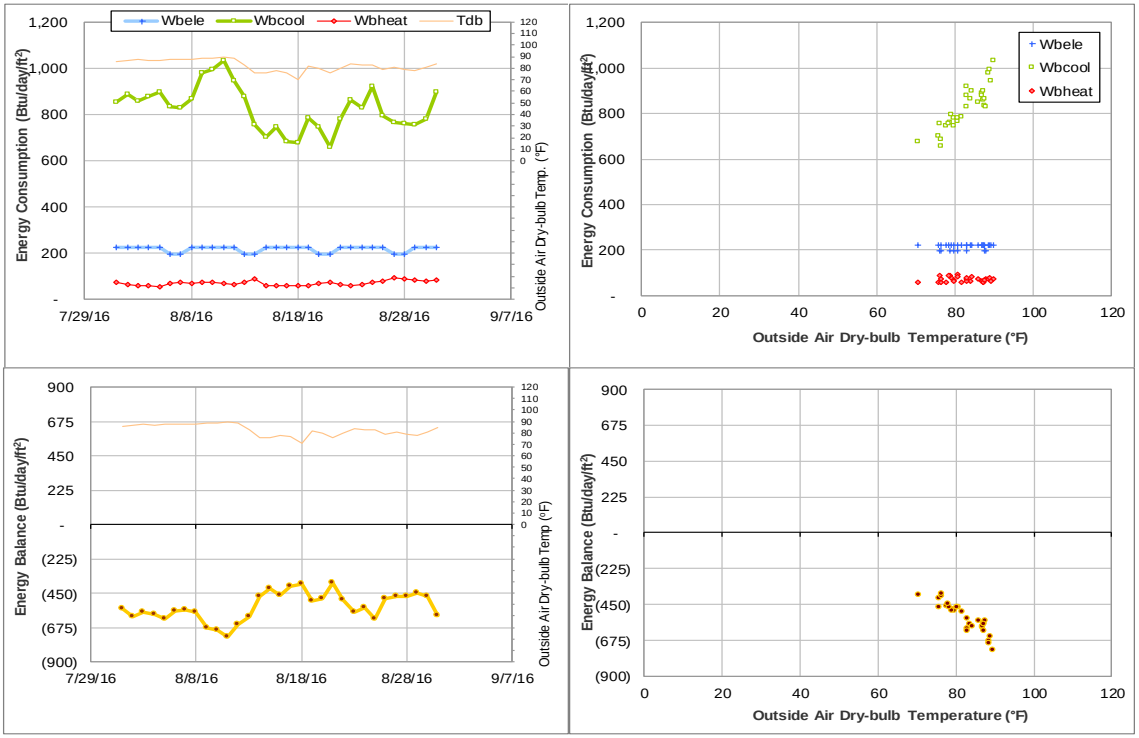


Figure V-29 Office of the State Chemist Building TAMU BLDG # 1810 Energy Balance Plot during August 2016

VI. Appendix

ENERGY ANALYSIS GROUP

ENERGY SYSTEMS LABORATORY
TEXAS A&M ENGINEERING EXPERIMENT STATION

Project: TAMU: Energy Analysis*

Report: Energy Consumption Data Quality Assurance/Quality Control Assessment Report for the Month of August 2016

Prepared for:

Utility & Energy Services

Division of Administration

Texas A&M University

Authors: Xiaoli Li, Kimberly Jones, Hongxiang Fu

Dr. Juan-Carlos Baltazar, and Dr. David Claridge

Date: September 2016

* For information on TAMU project please contact the Team Manager Dr. Juan-Carlos Baltazar